BEYOND CARRYING CAPACITY

INTEGRATING ECOSYSTEM MANAGEMENT

on a WILD and SCENIC RIVER:

THE CACHE LA POUDRE RIVER

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ABSTRACT

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TITLE: Beyond Carrying Capacity, Integrating Ecosystem Management on a Wild and Scenic River: the Cache La Poudre River

ABSTRACT:

Public demand and increased development on river resources are increasing substantially and the Cache La Poudre River is an example of a river experiencing this transformation. From recreation to water resources, wildlife and fisheries, this river canyon encounters many demands from human to wildlife dimensions. The Wild and Scenic Rivers Act directs managing agencies to develop a management plan for the protection and/or enhancement of the outstanding remarkable values for the designated river and associated corridor. The outstanding remarkable values for the Cache La Poudre River include Recreation, Scenery, and Hydrology. This paper investigates the social conditions, perceptions of the experience, and prescribes a monitoring program developed from resource user and management consensus to maintain the Cache La Poudre's river ecosystem. Key elements of ecosystem management include consistent monitoring effort, an evaluation of management outcomes, and where necessary, adapting management to incorporate new information from the monitoring, the scientific community, and the public. This microcosm example of the Poudre River study exemplifies the integral nature of employing ecosystem principals for river management through these key elements.

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EXECUTIVE SUMMARY

Title: Beyond Carrying Capacity, Integrating Ecosystem Management on a Wild and Scenic River: The Cache La Poudre River.

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Summary:

Our nation's river resources offer several types of recreational opportunities for which demand has grown rapidly during the past few decades. This growth trend in river recreation heightens competition for all types of recreation use. The Cache La Poudre River in Colorado follows this upward participation pattern. Human activities can degrade the river resource and detract from ones perceptions of the quality of the river user's experience. Increased recreational uses within a river corridor can also result in heightened conflict among the river population.

Public demand and increased development on river resources are increasing and the Cache La Poudre River is a classic example of this transformation. River recreationists, planners, and managers are concerned about the steady growth in river use and the possibility that impacts may destroy the values and elements of the river experiences sought by river recreationists.

The Cache La Poudre River was designated and classified as a recreational and wild river in the National Wild and Scenic River System on October 30, 1986. The

Environmental Impact Statement (EIS) leading to designation of the Cache La Poudre as a Wild and Scenic River and the river management plan (May 1990) initiated the impetus for many studies for obtaining pertinent information on the river. Federal law pertaining to wild and scenic rivers mandates that river managers protect the outstanding remarkable values (ORV's) that qualified the river for inclusion into the Wild and Scenic Rivers System. The Cache La Poudre's ORV's are: scenic value, recreation values, hydrologic values (water quality, water volume) and meaningful experience opportunity values. This paper investigates the social conditions, perceptions of the experience, and prescribes a monitoring program developed from resource user and management consensus to maintain the Cache La Poudre's river ecosystem. Key elements of ecosystem management include consistent monitoring effort, an evaluation of management outcomes, and where appriopriate, incorporation of new information from the monitoring, the scientific community, and the public into river management. The key to understanding the breadth of agency responsibility to alleviate damage to resources or the quality of the recreation experience for wild and scenic rivers is to understand the condition of the river and quality of the recreational experience at the time of national wild and scenic designation. This paper investigates the social conditions, perceptions of the experience, and prescribes a monitoring program developed from resource user and management consensus to maintain the Cache La Poudre's river ecosystem.

CHAPTER I

Introduction

The Cache La Poudre River has long been a popular recreation destination in northern Colorado. It is used by the public for fishing, white water boating, camping, picnicking, hiking, biking, scenic driving, hunting, and just relaxing. On October 30, 1986, seventy-five miles of the Poudre were designated as part of the National Wild and Scenic Rivers System, by Public Law 99-590. Thirty miles were classified Wild and 45 miles were classified Recreational. Public Law 99-590 requires that a management plan be prepared by the Forest Service and this was completed March 1990. The plan addressed resource protection, development of lands and facilities, user capacities, and other management practices to achieve the purposes of the Wild and Scenic Rivers Act. This plan has provided an excellent framework for managing the Poudre River.

Issues related to commercial rafting on the main stem of the Poudre were the most controversial to many segments of the public while preparing the management plan. A detailed carrying capacity analysis was conducted to develop methods, results, and final recommendations to resolve these issues. However, since this initial carrying capacity analysis, whitewater boating has continued to explode and the increased levels of use along the river corridor continued to be contentious with numerous complaints being received to the Forest Service. In response to this situation, a user preference and perceived crowding survey was conducted in partnership with Colorado State University's Department of Recreation Resources professors Dr. Jerry Vaske and Maureen Donnelly. This study was directed in the

Cache La Poudre Management Plan if use appears to be exceeding the social capacity (see pg 61 CLP Plan). From this user preference study, a proactive management strategy and monitoring program was devised and will be implemented by applying Ecosystem management concepts and the Limits of Acceptable Change (LAC) principles to assist in managing the Poudre Wild and Scenic River.

An extensive literature review was conducted and summarized to give the author and reader a sense of perspective of the initial implementation of recreational river management and its evolution since that time. This paper uses the current state of art river management concepts to develop a strategy specifically for the Cache La Poudre River.

CHAPTER II

Review of Literature

This chapter has five purposes. The first is to provide a brief review of the rapid growth in recreational river running and the federal agencies' management response to this explosion in initiating management of these resources. The second purpose is to explore the application of carrying capacity in wildland areas, conflicts of empirical evidence that has surrounds it and the concept of product shift and displacement. The third objective is to probe the present concept of user preferences and the limits of acceptable change outlined in the terms of density and crowding. Next, an overview of ecosystem management in examined. Finally, a brief history and background of the Cache La Poudre River is addressed and discussed because of it's unique history and background.

History of River Recreation Management

Rivers have always "enriched" humankind by providing many valuable characteristics for man to expand his horizons. Historically rivers have been valued as transportation corridors for exploration, development, and commerce. Following the industrial revolution, rivers were found useful for irrigation, power generation and as a convenient means of carrying away unwanted wastes. Rapids were looked upon as obstacles to be bypassed or eliminated. It was not until the 1960's that rivers were "discovered" as a valuable source of whitewater recreation. Several factors probably contributed to this growth of whitewater river recreation. Surplus World War

II rafts were readily available and superior to the older craft and new equipment developments created a new field into safer boating (Williams, 1987).

River running exploded with many recreationists seeking experiences on America's rivers. Ecological problems were beginning to occur on the rivers which included the in-adequate disposal of human wastes at popular river-bank campsites and stopover points, the protection of river water from pollution by human wastes, the erosion and compaction of soil at heavily-used campsites and sand bars, the destruction or alteration of vegetative communities due to overuse or misuse, the incidence of fire along the river, and the disturbance of wildlife, especially endangered species. These factors quickly escalated into an intense interest in the preservation of river resources and federal land managers implemented the need for land and river use planning.

Historical records indicate that between 1966 and 1970, use of the Colorado River through the Grand Canyon increased from just over 1000 to almost 10,000 users per year, an average rate of growth of about 75 percent (Roggenbuck, 1975). Use on the Colorado River in Grand Canyon in 1972 alone was more than had occurred in the 100 years from 1870 Powell Expedition to 1969 (Mak et al., 1977). The Grand Canyon National Park imposed use limitations in 1970 but demand still increased. The waiting list for a private boating permit is presently over seven years long for launching dates and in 1988, new alternatives were proposed to eliminate some of the problems in the allocation system. The public hearings during the summer and fall of 1988 concerning the Grand Canyon revised management plan signifies that public input has become an integral part of the direction for managing our river resources (USDI GCNP 1988).

Upstream on the Colorado in Canyonlands National Park, float trips increased by approximately 60 percent per year. An increase from 585 persons in 1969 to almost 2,500 persons in 1972 prompted the National Park Service to impose ceilings on river use (Roggenbuck, 1975). The use on Desolation-Gray Canyon of the Green River in Utah in 1975 was more than six times the amount in 1971 (Mak et al., 1977).

In 1982, a recreation area management plan for the Arkansas River in Colorado was completed by the Bureau of Land Management. Several elements of that plan were implemented but much remained to be done and in the late 1980's river use changed drastically and the plan became outdated. Recreation visitation for boating use doubled, although the net increase in numbers of commercial outfitters has increased only slightly (USDI ARK, 1988). This is an indication that river boating use is maturing for commercial trips but private use is continuing to explode. However, in recent years, user conflicts and congestion, concerns for safety, resource deterioration, sanitation problems, and the like are still continuing to be major concerns of many federal land managers and river users. As a consequence, the topics of overuse and crowding on rivers have received more attention in the recreation literature (Boteler,1985; Knopf et al.,1983; Knopp et al.,1979; Schreyer and Roggenbuck,1978)

The continuing saga of recreational river use on the Arkansas River convinced researchers to produce a recent report (September 1993) on recreational use of the Arkansas River (Roggenbuck et al., 1993) focusing on the use and user characteristics, management preferences, and satisfaction of boaters and anglers on the Arkansas Headwaters Recreation Area (Colorado). This investigation revealed

boaters and anglers had numerous different perceptions, preferences, and opinions about issues concerning the Arkansas River. There were considerable differences by river segment, especially among boaters and there were three distinct user groups: commercial boaters, private boaters, and anglers. The focus of this Clemson project, the Cache La Poudre River also reaffirms these findings. Some of the problems and possible solutions from the Arkansas report could also be adapted to other river management scenarios and they include:

* Inform and persuade private boaters and coordinate with commercial river outfitters to alter the time of departure, day of week of the river trip and time during season of the river trip. (Care must be taken to avoid increasing conflict with anglers.)

* Encourage river users to use different put-in or take-out points or where necessary, construct additional access points to spread use, especially boating use, along the river.

*Inform anglers about high boating use times and recommend fishing at other times on the river.

* Educate boaters to avoid holes where anglers are fishing, and to respect the anglers' solitude by not calling out to them.

* Establish a dialogue with the private boaters to better understand the nature of their concerns.

* While the private boaters seem for the most part to want to be left alone, determine what facilities and services they want.

"Private boaters seem for the most part to want to be left alone," the report said. "While more research is needed, we have the impression that private boaters feel

that river managers have been too quick to listen to and respond to the needs of the commercial boaters, to the detriment of the experiences of the private users" (Roggenbuck 1993).

Federal land managers have limited use in certain wildland areas without having developed substantial rationales for carrying capacity identification and implementation. Knowing that capacity determinations by definitions deny certain members of the public access to resources they desire, combined with the increasing demands for recreational opportunities (increasing the number of individuals so denied), it appears inevitable that challenges to the equity of such decisions will multiply (Schreyer and Roggenbuck 1978).

Many limitations have been placed on administrators and managers of our nations river resources i.e. financially, and politically as well as the problems of increased demand and diversity of recreational uses on our rivers. Mak, Jensen and Hartman (1977) exemplify why planning and public involvement are needed and show how conflicting interests can result in political pressures creating more problems for the resource managers.

Mak, Jensen, and Hartman (1977) also cited three phases for agencies to respond to the growing pressures in managing white-water river recreation. The first is a decision to take action, Second is the formulation of an operation plan. Third, the plan will need to be tested in a crucible of public opinion, pressure groups, and the power of representative government.

Thus, after a managing agency decides to initiate action, they must set up a plan and define use limitations and initiated research and study programs which leads this into the next section concerning carrying capacity.

Carrying Capacity

Determination of carrying capacity has been researched and written about extensively. Shelby and Heberlein (1986) discuss carrying capacity in terms of four distinct types.

These four are:

1. ecological carrying capacity - the level of use beyond which impacts exceed acceptable levels specified by evaluative standards.
2. physical carrying capacity - concerned with impacts on the eco-system.
3. facility carrying capacity - refers to improvements intended t o handle visitor needs.
4. social carrying capacity - refers to impacts which impair or alter human experiences.

A great deal has been written specifically about ecological carrying capacity, yet most of the literature agrees that social carrying capacity presents the most difficult because of the human element.

Stankey and McCool (1984) traced the historical evolution of the carrying capacity concepts and believe the essential elements include the idea that (1) recreationists sought multiple satisfactions from recreation engagements, and depending upon these, encounters with others might add, detract, or be neutral in their effect on those experiences; (2) the satisfaction visitors report is a function of more than use level -- the type, frequency, and location of encounters are important intervening variables; (3) clearly stated objectives are essential to identifying carrying capacities; and (4) the emphasis in management needs to be on the outputs - the experiential and environmental conditions desired - not on inputs such as use levels.

A considerable body of knowledge has focused on density, crowding, and social carrying capacity. The effects of density on the quality of the recreation experience has been the debate of many social scientists. This concern over the effects of increasing use on the quality of recreation experience, particularly in wilderness and related environments was first initiated by J. Alan Wagar. Wagar (1964) conceptually applied carrying capacity to recreation and noted a relationship between crowding and recreation quality. Wagar (1964 p.3) defined carrying capacity as the "level of recreation use an area can withstand while providing a sustained quality of recreation". This relationship has been investigated intensely since Wagar's concept, with many theoretical and empirical studies conducted (Becker et al.,1984 Graefe et al., 1984 Heberlein, 1977, Kurtz, 1988, Shelby, Heberlein, 1984, 1986, Stankey, McCool, 1984). Findings from these studies indicate crowding is a complex issue and some studies have found an inverse relationship (Stankey 1973) between density, crowding, and satisfaction, while many have not (Manning,1984; Shelby, Nielsen 1977). The subject of carrying capacity was even reconsidered and thought of as elusive and Wagar (1974) concluded that we should abandon its pursuit altogether.

While the concept of social carrying capacity has benefitted from considerable discussion on a theoretical basis, its underlying assumption of a negative relationship between density and satisfaction has received only limited correlations. The best known crowding research based on carrying capacity was reported by Stankey (1973). The relationship between density and satisfaction was tested hypothetically by Stankey in four wilderness areas and each of the almost 500 respondents was asked to rate their level of satisfaction on a five point affective scale. Stankey reported that

the type of group encountered had a significant effect on expressed preferences for encounters independent of the number involved. Contacts with hikers were preferred over those with horseback groups and canoeists were preferred over motorboaters. Stankey also found a spatial component of the expressed preferences, with contacts while traveling preferred over those while at campsite and encounters around the area's periphery preferable to those in the interior. Manning and Ciali (1980) also investigated this relationship among river users in Vermont and when asked to react to hypothetical encounters, the replies were identical to those reported by Stankey. A clear negative relationship was found when tested using a hypothetical example, but when tested using actual field data, no relationship was found. Similar results have been reported in several other studies undertaken in both wilderness and nonwilderness settings (Heberlein, 1977; Shelby, Nielsen, 1977; Gramann, 1982). In each of these cases there was little effect of actual encounters on individual users' satisfaction with their recreation experience.

The research described by Manning and Ciali (1980) indicates that the nature of the density - satisfaction relationship is complex, with dissatisfaction occurring only when density levels perceived by participants as crowded, and the density levels at which crowding occurs being a function of activity, setting, and personal characteristics of the participant. Manning and Ciali hypothesized that increasing use and higher density levels over time may cause a change in the definition of the recreation experience and as a result the participants may alter their definition of appropriate contact levels. This is known as product shift and is recognized that satisfaction remains high regardless of increased density as satisfaction is being

expressed for a different recreation product. They concluded that this hypothesis appears reasonable conceptually but is difficult to test empirically.

(Shelby et al., 1988) suggested that the reason empirical evidence has not supported the simple bivariate density-satisfaction model is because of displacement and product shift. This paper investigated a longitudinal comparison of river users on the Rogue and Illinois Rivers in 1977 and 1984. It found that those dissatisfied with crowding or resource impacts move to more remote sites or change their definitions of recreation experiences than to become dissatisfied. The product is the river experience, and the shift is the redefinition in the face of conditions which may be unacceptable within the context of the users original expectations. The data from the Rogue and Illinois River users supported the reasons for displacement including social and environmental factors and confirmed experience definitions will change toward higher density experiences. The amount of perceived crowding was not significantly different from 1977 to 1984 and satisfaction remained high during both studies. Shelby et al. (1988), concluded that findings about product shift can enable management efforts to define important characteristics of recreation experiences and then regulate use in order to keep impacts within specified standards. This area of concern; density, crowding, and product shift indicates that user preference needs to be an issue in the decision making process.

User Preferences

Individuals vary in their response to increasing recreation use and their tolerances for crowding. Previous studies have indicated that a diversity of attitudes exists

among wilderness users. This diversity makes it difficult for managers to interpret and incorporate visitor desires in decision making because such attitudes may be inconsistent with other constraints the manager must consider (Stankey 1973).

Several investigations have compared experienced versus inexperienced visitors to provide a better understanding of diverse groups (Vaske et al., 1977; Shelby and Neilson,1977, Knopf and Lime, 1984). Outdoor recreation participants have also been categorized according to their expectations or motives (Haas, 1979; Roggenbuck, 1975). Shelby and Heberlein (1984) discussed criterion in evaluating standards; satisfaction, perceived crowding, and measuring individual preferences. When ecological, facility, and physical carrying capacities are not limiting factors, a number of researchers suggest that user preferences be assessed in order to determine social carrying capacity (Shelby and Heberlein, 1986). Shelby and Heberlein maintain that the best approach to determining carrying capacity requires a descriptive and an evaluative component. "The descriptive component documents the observable workings of the recreation system, while the evaluative component integrates value judgments into the capacity determination" (1984, p.434.). They also explain that the best approach to determining evaluative standards is to measure individual user preferences and allow a shared norm or group standard to emerge from the user responses. They maintain that the two other models for obtaining evaluative standards, satisfaction and perceived crowding, are less useful than one based on user preferences. Their contention is based on the fact that research does not support the assumption that an increase in use is directly related to decrease in user satisfaction (Shelby and Neilson, 1977).

In contrast, Stankey and McCool (1984) outline a carrying capacity planning framework that focuses on the management of conditions. Emphasis in their model is placed on managers who must "identify the location, type, and level of change considered appropriate and acceptable in an area and the actions consistent with protecting an area from changes in excess of those judged acceptable" (Stankey and McCool, 1984, p.460). Driver, Brown, Stankey, and Gregorie (1987) recently wrote an assessment of the Recreation Opportunity Spectrum (ROS) using the U.S. Forest Service as an example of on the ground application. Although they felt that the design of the ROS is solid, they suggested several aspects the ROS system that needed further research. One of these needs is information on user preferences. A discussion by Richard Schreyer (1984) explains that public preferences have been channeled toward "unspoiled" experiences and have created a rhetoric favoring limitation of use. Such values often do not account for the evolutionary nature of human tastes or the adaptability of persons to changing conditions in an environment. Further, there are potential concerns for equity and social justice. The use limitation arguments discussed in this review explored the need for this study of user preferences concerning density on the Cache La Poudre River.

One of the basic contentions of use limitations is that management finds it extremely difficult to withdraw the amount of river runners from the present situation even if the consensus agrees that there are too many recreationists considered appropriate and acceptable along the river corridor. The whitewater boating sector has matured since its infancy and investigating user preferences for certain type of experiences needs to be explored for changes.

River resource management has been dynamically changing in the past decade and information on the social and economic backgrounds of river recreationists: why they are attracted to water, what kinds of environmental settings and experiences they seek, and their opinions about management is fairly limited, but has grown significantly during the past decade (Lime, 1986). During its infancy, many river recreationists were users who sought solitude, a pristine and natural environment, but there are trends that indicate that the type of users may be gradually changing. Recently there is a disproportionate growth in the number of river recreationist seeking a social experience on rivers. For some river users, being with other people is the primarily objective of the outing, and the river becomes almost secondary. Escalating use by those seeking primarily a social experience may result in increased conflict among user populations and may continue to displace users who no longer find conditions acceptable. Catering to the growing number of river recreationists seeking a social experience on rivers will present new challenges to river planners because traditional user education, safety, information, and interpretation programs may no longer be effective. Several general patterns and trends in river recreation seem to be emerging include:

1. A wider segment of society participating in river recreation;
2. As the population ages, a stabilizing of demand;
3. An increasingly more experienced group of river users who tend to use their own equipment (Lime 1986)

This study investigates Limes speculation about the future challenges and changes occurring in river recreation and management. This study is also evaluating the predicted patterns and trends that Lime (1986) proposed and that were presented at the 1st International Congress on Trail and River Recreation in 1986.

Ecosystem Management on a River Corridor

Ecosystem management is a term much in use today by the Forest Service and numerous other agencies but is too little understood. Jack Ward Thomas explained this misapplied term to Congress recently and he said, "Ecosystem management is a holistic approach to natural resource management, moving beyond a compartmentalized approach focusing on the individual parts of the forest. It's an approach that steps back from the forest stand and focuses on the forest landscape and its position in the larger environment in order to integrate the human, biological, and physical dimensions of natural resource management. The purpose is to achieve sustainability of all resources." On June 4 1992, the Forest Service announced a policy which identified Ecosystem Management as the guiding direction for all future management and research activities. As articulated in the initial policy statement:

> "Ecosystem management means using an ecological approach to achieve multiple-use management of national forests and grasslands by blending the needs of people and environmental values in such a way that the national forests and grasslands represent diverse, healthy, productive and sustainable ecosystems".

A key element to ecosystem management is a consistent monitoring effort, an evaluation of management outcomes, and where necessary, adapting our management to incorporate new information from the monitoring, the scientific, community, and the public. The Cache La Poudre Wild and Scenic River Plan was completed March 1990 and this project exhibits how we are implementing ecosystem management by emphasizing the integral part of monitoring and evaluation in the management process. The river study and subsequent public meetings in January 1994 tie in the principals of EM. By collaboration with the users and sister agencies that have a stake along the Poudre River corridor we are coming together to discuss

issues, learn from one another, and work toward a consensus on how the river should be managed. Appendix 2,3,and 4 highlights recent surveys and collaboration with the public on ideas of how the Poudre should be managed. The position and role of humans in ecosystem management play a key part in ecosystem management. We must remember that everything we do is related to human values. We are not managing the river because the river is protected but because people cared about the river and this led to its national designation as a Wild and Scenic River and protection. The concern for a "healthy" river ecosystem is not only for the river sake, but because that is the best way of providing the people of the future with everything we value in our river today. EM is about balancing different human values, not pitting the river ecosystem against people. This was the goal in the Cache La Poudre River Plan "Maintaining a balance of uses while reducing conflicts between users." People are beginning to realize cooperation is key to protection and the recent synopsis about water quality indicates such even when water is such a contentious issue in the state of Colorado. The water issue is as controversial to Colorado as timber is to the Pacific Northwest.

Water quality is gaining more importance in evaluating how rivers are used in Colorado, government officials said October 27, 1993 at a conference to talk about issues related to the South Platte River. The major topic of discussion was how the region can develop a cooperative approach to management of the watershed of the South Platte River of which the Cache La Poudre River is included. Such an approach would take into consideration a wide variety of issues, such as wildlife habitat protection, waste discharge permits, ecosystem management, developing municipal water supplies, agricultural irrigation, land use and ground water quality

(Coloradoan 10/28/93). The water quality issue continues to run head on into Colorado water law, which is based on appropriation rights - more commonly know as "use it or lose it."

Cache La Poudre River History

Monitoring should precede establishment of recreation use allocation system for commercial and noncommercial use and is essential to correlate use levels with resource condition. A monitoring program needed to be established on the Cache La Poudre River to determine the appropriate amount of noncommercial and commercial boating use to ensure use restrictions are effective. It was constituted to optimize opportunities and meet direction of the Wild and Scenic Rivers Act guidelines.

According to the guidelines of the Wild and Scenic Rivers Act in the Federal Register Part VII in Section III - Management, the following management principles stem from section 10(a) of the Wild and Scenic Rivers Act. Managing agencies will implement these principles to the fullest extent possible.

Carrying Capacity: Studies will be made during the preparation of the management plan and periodically thereafter to determine the quantity and mixture of recreation and other public use which can be permitted without adverse impact on the resource values of the river. Management of the river area can be planned accordingly.

Public use and Access: Public use will be regulated and distributed where necessary to protect and enhance the resource values of the river area. Public use may be controlled by limiting access to the river, by issuing permits, or by other means available to the managing agency through its general statutory authorities.

A Clemson paper completed by Kathy Kurtz in 1988 initiated the first "Methodology for Determining and Allocating Carrying Capacity in a Roaded Natural River Corridor" for the Cache La Poudre River. The methodology suggests that

standards for social carrying capacity should be determined by sampling user preferences and integrating the results with manager's professional judgement.

Carrying capacity has focused on an acceptable amount of use. The Limits of Acceptable Change (LAC) approach, defines the acceptable amount of change or impact to ecological or social resources rather than defining a level of acceptable use. This investigation initiated this baseline information by instituting the concept of the limits of acceptable change by seeking user preferences in density and perceived crowding. This enables managers and planners determine when river use becomes undesirable because of too many recreationists. It has also assisted in establishing insight for the Cache La Poudre River in measuring and predicting demand and change. Chapter VII shows LAC monitoring framework for the Poudre River.

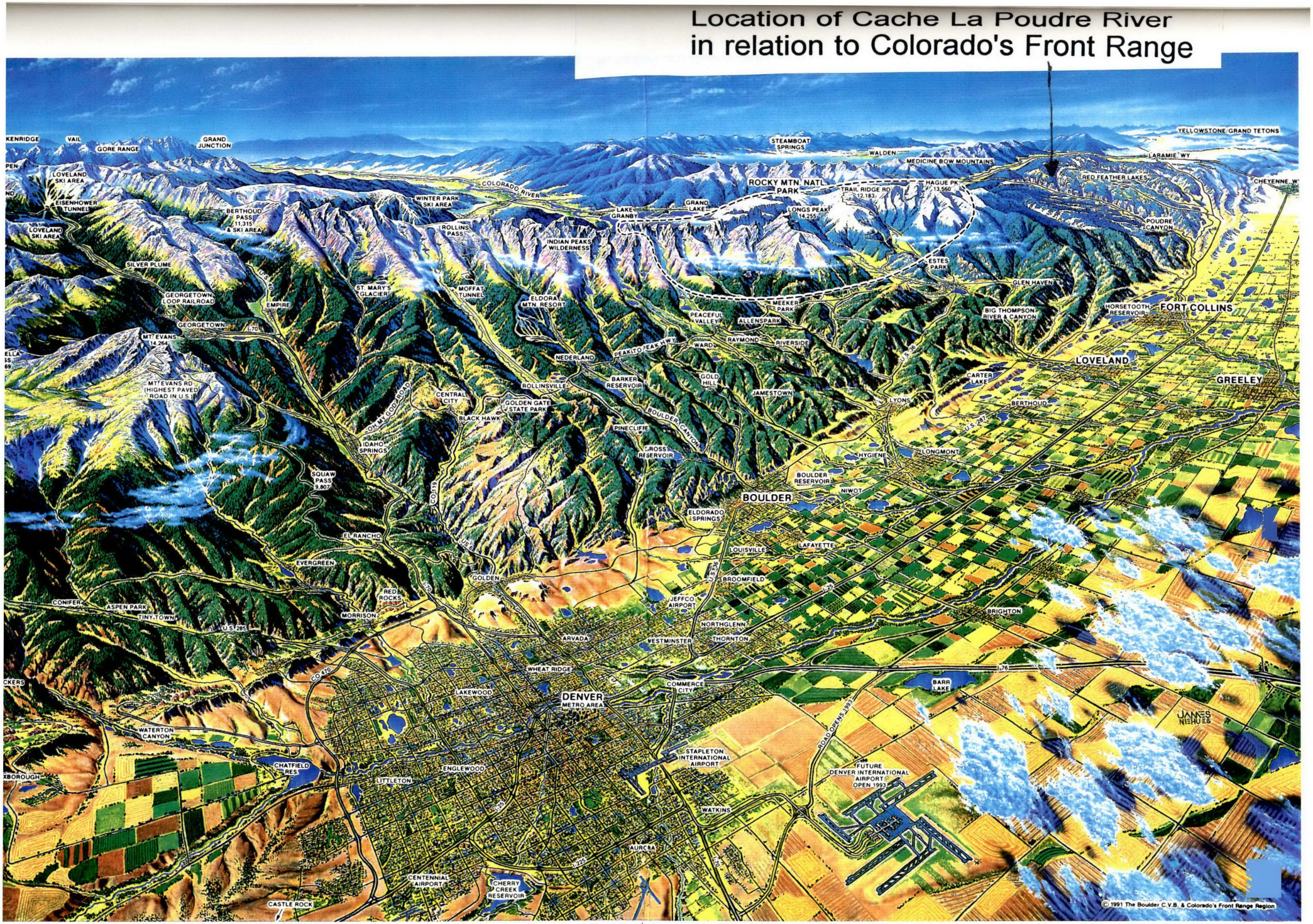

Location of Cache La Poudre River
in relation to Colorado's Front Range
KENRIDGE
VAIL
GORE RANGE
GRAND JUNCTION
STEAMBOAT SPRINGS
WALDEN
MEDICINE BOW MOUNTAINS
LARAMIE, WY
YELLOWSTONE/GRAND TETONS
CHEYENNE, WY
LOVELAND SKI AREA
EISENHOWER TUNNEL
COLORADO RIVER
ROCKY MTN. NATL. PARK
TRAIL RIDGE RD 12,183'
HAGUE PK 13,560'
RED FEATHER LAKES
WINTER PARK SKI AREA
GRAND LAKE
LAKE GRANBY
LONGS PEAK 14,255'
BERTHOUD PASS 11,315' & SKI AREA
ROLLINS PASS
INDIAN PEAKS WILDERNESS
POUDRE CANYON
LOVELAND SKI AREA
SILVER PLUME
ESTES PARK
GLEN HAVEN
ST. MARY'S GLACIER
MOFFAT TUNNEL
ELDORA MTN. RESORT
MEEKER PARK
GEORGETOWN LOOP RAILROAD
EMPIRE
PEACEFUL VALLEY
ALLENSPARK
BIG THOMPSON RIVER & CANYON
HORSETOOTH RESERVOIR
FORT COLLINS
GEORGETOWN
I-70
MT. EVANS 14,264'
RAYMOND
RIVERSIDE
PEAKTO PEAK HWY
WARD
NEDERLAND
LOVELAND
MT. EVANS RD (HIGHEST PAVED ROAD IN U.S.)
BARKER RESERVOIR
GOLD HILL
CARTER LAKE
GREELEY
ROLLINSVILLE
CENTRAL CITY
GOLDEN GATE STATE PARK
JAMESTOWN
LYONS
BERTHOUD
SUN MT. CORP ROAD
BLACK HAWK
BOULDER CANYON
PINECLIFFE
IDAHO SPRINGS
ROSS RESERVOIR
HYGIENE
LONGMONT
SQUAW PASS 9,807'
BOULDER RESERVOIR
NIWOT
BOULDER
COLO. 119
ELDORADO SPRINGS
EL RANCHO
LOUISVILLE
LAFAYETTE
EVERGREEN
GOLDEN
BROOMFIELD
CONIFER
ASPEN PARK
TINY TOWN
RED ROCKS
JEFFCO AIRPORT
BRIGHTON
MORRISON
U.S. 285
NORTHGLENN
ARVADA
WESTMINSTER
THORNTON
WHEAT RIDGE
COMMERCE CITY
BARR LAKE
LAKEWOOD
DENVER METRO AREA
JAMES NIEHUES
WATERTON CANYON
STAPLETON INTERNATIONAL AIRPORT
ROAD OPENS 1993
CHATFIELD RES.
ENGLEWOOD
FUTURE DENVER INTERNATIONAL AIRPORT OPEN 1993
LITTLETON
WATKINS
AURORA
CENTENNIAL AIRPORT
CHERRY CREEK RESERVOIR
CASTLE ROCK
© 1991 The Boulder C.V.B. & Colorado's Front Range Region

FIGURE 1

Cache La Poudre Wild and Scenic River Corridor

FIGURE 2

CHAPTER III

Definition of Terms

Cache La Poudre River: refers to a specific river drainage on the eastern slope of the Rockies in Colorado (often referred to as the Front Range). The section studied is the 38 miles that is administered by the U.S. Forest Service (Figure 1 and 2). This river will often be referred to as the Poudre.

Density: The number of encounters that occur between river recreationists. A physical concept relating to the idea of the number of people per unit of space.

Crowding: subjective evaluation of some density level.

Expectation: To surmise the probable occurrence or appearance of.

Social Carrying Capacity: The level of use that exceeds acceptable levels by the norm of river recreationists.

The level of use that impairs or alter human experiences.

Limits of Acceptable Change: (LAC) A planning process based on recognizing that change is an inevitable result of use. LAC is based on the premise that change to ecological and social conditions of an area will occur as a result of natural and human factors. The goal of managment is to keep the character and rate of change due to human factors within acceptable levels.

CHAPTER IV

Project Objectives, Research Methods and Monitoring Program

The purpose of this study has been to develop a baseline measure of user preferences and experiences of river recreationists on the Cache La Poudre River. This in turn has led to discovering whether there is a significant difference from the average response between several types and groups of river users. This investigation researched user preferences towards experiences sought and levels of density preferred of river recreationists on the Cache La Poudre River and assessed problems and impacts associated with the level of use on the Poudre River. More specifically, this study conducted a visitor experience and social carrying capacity investigation. Managers need information on user characteristics and preferences in order to develop effective management plans and evaluate newly implemented policies to conform with the National Wild and Scenic Rivers Act.

The US Forest Service and Colorado' State University's Department of Recreation Resources worked in partnership in this study. With the assistance of two leading researchers in social interactions in recreation settings Dr Jerry Vaske and Dr. Maureen Donnelly, a statistically valid investigation was

conducted. The Forest Service employed two graduate students as forestry technicians to setup the investigation, conduct the interviews, enter data, and obtain baseline monitoring information for the Poudre River. Martha Moran Estes-Poudre Ranger Districts Outdoor Recreation Planner, initiated the concept of this study, organized the scope of work, provided guidance, and supervised the project. The objectives of the study were integrated into this Clemson project.

Objectives

To accomplish the stated purpose, the following objectives were developed:

1. To review the past and present studies and plans for many rivers and integrate them for monitoring methodologies.

2. To collaborate with the public to help set the direction, indicators, and standards for acceptable change.

3. To educate and publicize the results of interviewing 1065 river runners, as well as anglers and landowners. This will help gain insight for existing and future user preferences and recreation experiences sought.

4. To examine the differences among levels of use; perceived crowding, quality of trip and satisfaction of the experience between various river users;

5. To initiate a limits of acceptable change and process and methodology for management actions on the river corridor.

CHAPTER V

Methodology

This study explores the differences between river recreationist's experiences, preferences, and characteristics of their type of participation. The Cache La Poudre River User Survey developed for this investigation has also addressed the potential problem of increased demand on the Poudre River in regard to the limits of acceptable change. Increased recreation use, crowding, littering, poorly located and maintained river accesses and trails, and excessive regulations all threaten to destroy the values that motivate visitations on rivers. This study has initiated and layed out a monitoring program to see how much change is occurring on the Poudre River corridor and set up specific elements to serve as tools to examine trends and highlight problems, and act as an early warning to predict future conditions. It included analyzing user preferences in determining the kinds of social conditions that are appropriate and acceptable. The levels of use boaters prefer to encounter as well as tolerate and experiences preferred has been the main components addressed. This chapter examines the study area, study population, sampling procedures, the kinds of data collection instruments used, and the procedures followed to analyze data. Table 1 provides an overview of the research design in this investigation and Table 2 presents an overview of the methodological procedures.

Study Area

The Poudre River is located in the Northern Front Range of the Rocky Mountains in Colorado and is one of the most popular float rivers in Colorado. Its high seasonal flow, historical prominence, proximity to major population centers in the Front Range of Colorado, world class fishing, and whitewater opportunities make it a popular recreation area. The river originates in the Rocky Mountains up in Rocky Mountain National Park. It flows north through the wild section and then turns east and becomes the recreation section through the Roosevelt National Forest and then flows through the city of Fort Collins, and it eventually it joins the South Platte River near Greeley Colorado. The Poudre River is renown for its scenic beauty and recreational opportunities and contains outstanding opportunities for whitewater boating, fishing, and roaded natural recreation. The characteristics and outstanding remarkable values that made the Poudre suitable for National Wild and Scenic designation are prominent recreational opportunities, spectacular scenery, unique hydrological attributes, and meaningful experience opportunity (CLP plan pg 4). The quality of the Cache La Poudre River as a remarkable recreation and scenic area has been discovered and recreational user growth has been a subject of concern by many people, and in the media in the past few years (see Appendix 2, 3 and 4). The National Wild and Scenic River designation will also enhance interest and recreational uses will likely continue to grow (Figures 3 and 4).

TABLE 1. RESEARCH DESIGN

This study utilized a one shot quasi experiment research design to monitor user preferences towards crowding. The following depicts the research design of this investigation:

Group	Treatment	Observation
COMMERCIAL BOATER	X	O
NONCOMMERCIAL BOATER	X	O
BEGINNER BOATER	X	O
INTERMEDIATE BOATER	X	O
ADVANCED BOATER	X	O
RAFTER	X	O
KAYAKER	X	O

TIME ——————————————————————————>

The treatment in this design is the participation in an Cache La Poudre River float trip at the time the boater was contacted. The observation is the component in assessing the preferences toward density, crowding, and expectations on the Cache La Poudre River.

TABLE 2.

AN OVERVIEW OF THE METHODOLOGICAL PROCEDURE

STUDY OBJECTIVES	DEPENDENT VARIABLES	INDEPENDENT VARIABLES	DATA COLLECTION INSTRUMENTS	STATISTICAL METHODS
OBJECTIVES	Experience definitions and preferences	Commercial/ noncommercial boaters	Interview Survey	Means
	Perception and tolerance of crowding	Commercial/ noncommercial boaters	Interview Survey	Median
	Perception and tolerance of crowding	Type of craft used by boaters	Interview Survey	Median

Study Population

The hypotheses in this study have been to determine the differences between river recreationist river trip experience definitions, user preferences, and levels of tolerance towards density and crowding on the Poudre River. On the basis of these hypotheses the study's target population were defined as the river recreationists on the Poudre River from Upper Rustic river access to Picnic Rock River access, the area administered by the Arapaho-Roosevelt National Forest. The elements of the population are individual river users. The actual survey population differs somewhat from the target population because of time, budget, and constraints limited in the collection of field data. Data collection began on Memorial Day weekend; May 29, 1993 and continued until Labor Day weekend; September 6, 1993. These dates were selected because most of the river use occurs during this season. Individuals under the age of 18 years old were not included in the study because they did not have the necessary experience to have established preference patterns for density and crowding. The study's actual population therefore is river floaters on the Poudre River from the Rustic Section, Mishawka, Bridges, and Filter Plant sections, age 18 and over, and who floated the river from May 29 to September 6, 1993.

Sampling Procedures

A survey sample for the Poudre study was obtained by two methods, contacting boaters at the most commonly used launches, and employing register boxes. During the 1993 summer season river boaters at designated ingress, lunch, and egress sites on the Poudre River were contacted and interviewed. Another method employed was communicating with river recreationists while boating the Poudre in a raft or kayak. The interview produced the recreation use information for the Poudre monitoring program. Register boxes were also installed at four designated river accesses points; Upper Landing, Bridges Put In, Bridges Take Out, Filter Plant Put In, (figure 4). River runners were asked to voluntarily register and fill out the registration sheet for each group floating to help protect the resource (figure 5). The register sheet provided applicable monitoring information such as name, address, date, type of craft, river ingress, and egress locations.

A pretest was conducted during the spring and twenty people received a draft version of the survey form as a pretest. After revisions were made to the questionnaire it was finalized and exercised by the 1009 river boaters and **** anglers used throughout the study .

We also initiated an anglers study similar to the boaters survey which was launched in August but it isn't statistically valid and we hope to confine for further investigation during the next few years. A landowners survey was administered during the summer of 1993 to collaborate with the folks who live along the river corridor and the results of this study are in Appendix 2. In 1992 a customer survey was administer to campers along the Cache La Poudre and the results of this are in Appendix 4.

Survey Form

The on site interview form was employed because there were a number of advantages to using on site questionnaires versus other surveying techniques. Inquiring about their river trip just after the trip provided immediate response and the most accurate recall for river encounters. We worked with the six outfitters prior to the study to make sure delay was not a problem due to surveying. The respondents are also assured of anonymity and confidentiality.

1. Questions about your river trip
2. Opinions of recreation river experiences
3. Attitude toward river trip encounters
4. Management actions for effecting their Poudre River trip
5. Demographic information

This study replicated selected parts of many studies conducted by Jerry Vaske, Maureen Donnelly, and Bo Shelby. These studies developed evaluative standards for judging the acceptability of impacts caused by recreation. The studies were designed to describe characteristics and preferences of river recreationists visiting a variety of rivers throughout the country and in Roggenbuck's the Green and Yampa Rivers. From the Klamath River CA, Grand Canyon of the Colorado, Rogue River, Clackamus River Study (B. Shelby, M.Brunson, 1989), and as well as the Dinosaur National Monument River Use Study (Roggenbuck, 1975) the Poudre was added to this extensive list to give a national perspective on perceived crowding. Page 62 highlights the various studies ratings with the Cache La Poudre included.

This study produced many diversities of data analysis for interpretation, information, examination, and projection for evaluation and strategies in river planning. The results of the study are disclosed in the following Chapter VI

Results as well as detailing the numerous conclusions and findings from this investigation are also in the following chapter. The passage of legislation of the Cache La Poudre River in the Wild and Scenic River system mandates that vital monitoring and information must be met to protect the outstanding remarkable values that initiated designation as well as the ecosystem management focus. This study obtained information concerning the amount and type of use occurring on the river corridor that directed implemented in the Poudre Wild and Scenic River Plan (pg.13, 61). The conclusions from this study could also be integrated into strategies towards a regional river management planning process.

CHAPTER VI

Results

General

As stated in the previous chapter, this study was stratified into different investigations between type of boater (rafter, kayaker, commercial, noncommercial) to determine the attitudes of different types of river users - commercial, noncommercial, rafters, kayakers. Information was collected through interviews and questionnaires during the summer of 1993. The entire study acquired information about the river participants along all the popular whitewater segments of the Poudre from Rustic to Picnic Rock that is administered by the Arapaho-Roosevelt National Forest.

Response Rate A total of 1065 interviews were completed by river boaters who agreed to participate in the survey. The response rate was very high with 98% of the river boaters agreeing to participate in the study.

User Profile In an attempt to provide an overview insight, the bibliographic information provided by the respondents was analyzed for a profile of the average respondent.

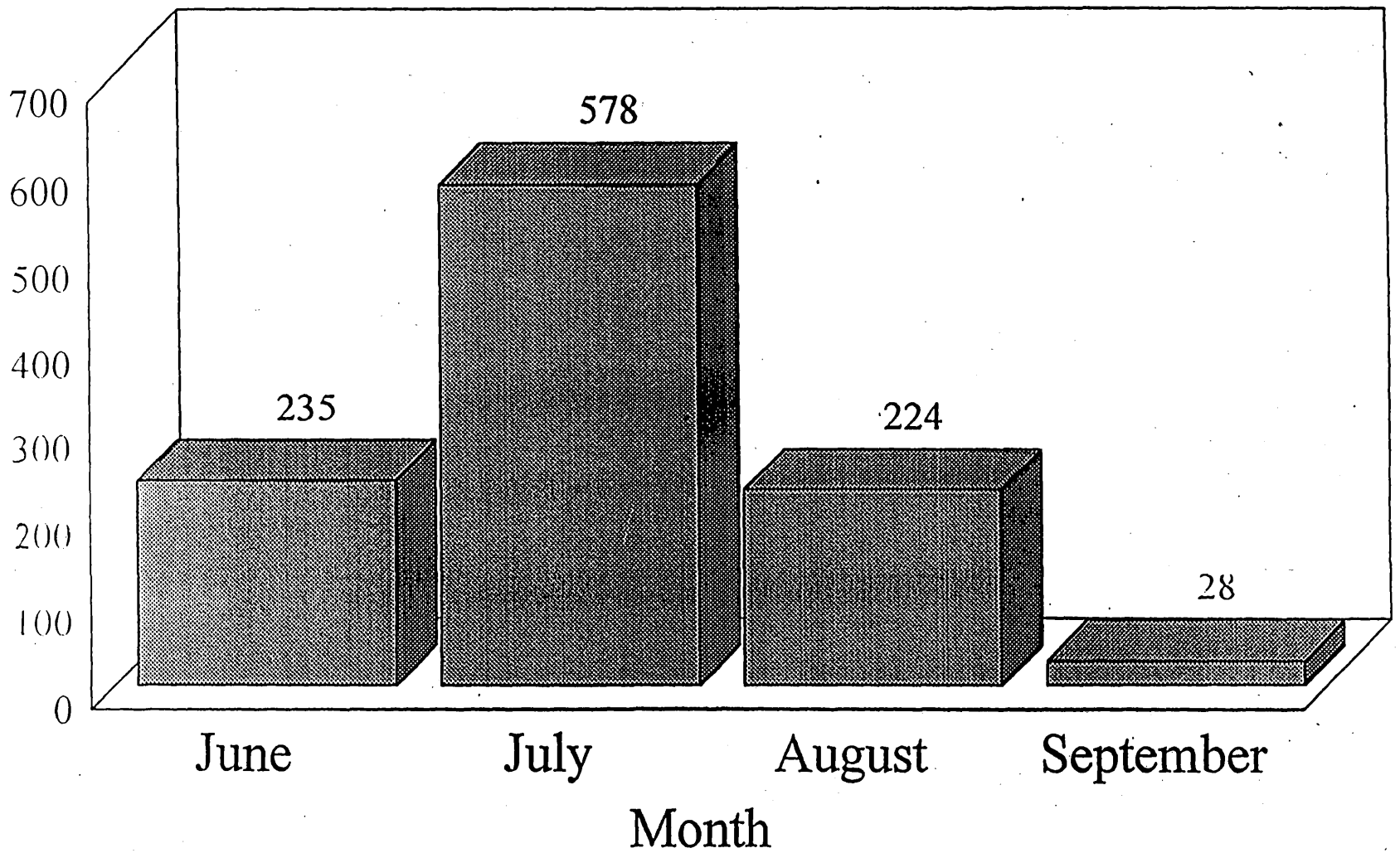
* Male (61%)
* Rafter (72 %)
* Commercial Boater (61%)
* 33 years of age
* Lives in Colorado (49)
* Perceived the river as not crowded
* Assessed his trip as excellent or better (64%)
* Rafter traveled in a party size of 6-10
* Kayaker traveled in a party size of 3-5

In order to comprehend the presentation of the findings, they are grouped according to several specific parts of the study; use patterns, social impacts, and perceptions of the experience.

Use Patterns Figure 4 displays a comparison of the type of craft used for boating the Cache La Poudre River with rafting the most popular activity. Of the 1065 participants of the study, 72 percent of the Poudre River boaters used rafts, followed by kayaks (25 percent), and the other 3 percent included canoers and tubers. About 39 percent utilize their own skills as noncommercial self guided boaters and 61 percent of the boaters use professional guide services. Over 50 percent of the respondents initiated their trip at Bridges Put In the most popular section of river boating on the Poudre.

An interesting difference was noted between noncommercial boaters and commercial passengers. First of all the type of boater i.e. rafter vs kayaker led the analysis to separate these two users because they were so distinguishable in their patterns and opinions. 93 percent of the kayakers were noncommercial while 82 percent of the rafters were commercial (Figure 9). The total number of float trips was very high for kayakers (25 percent) while 79 percent of the rafters enjoyed their first trip on the Poudre (Figure 10). Even during the last 12 months, 34% of the kayakers had floated the Poudre six or more times meanwhile 86 percent of the rafters had experienced their first trip (Figure 11). This represents a trend where the kayakers are more informed and knowledgeable about the Poudre River resource than the rafters.

Interviews per Month



Total N = 1065

FIGURE 3

Gender of Respondents

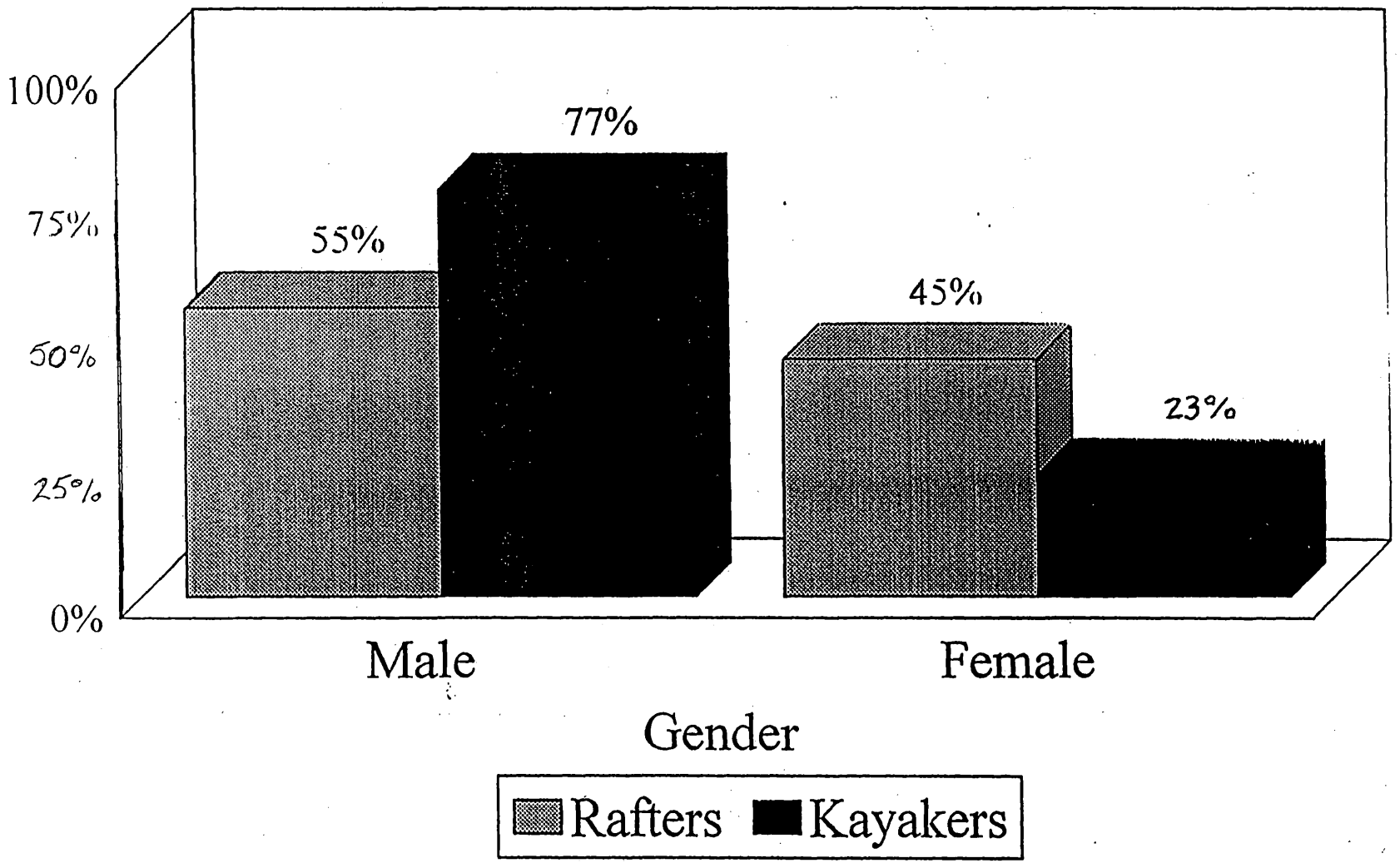


FIGURE 4

Age of Respondents

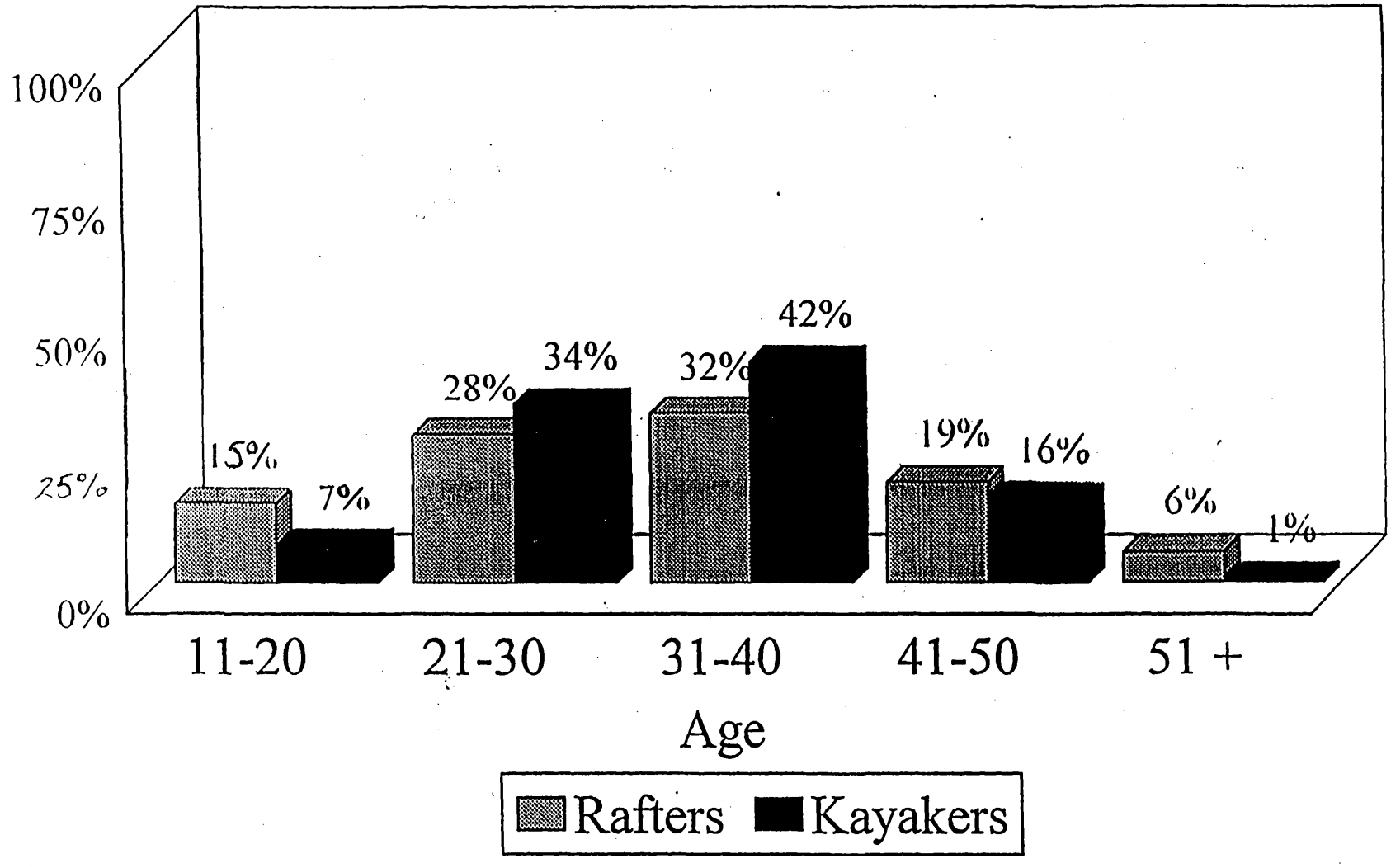


FIGURE 5

State of Residence

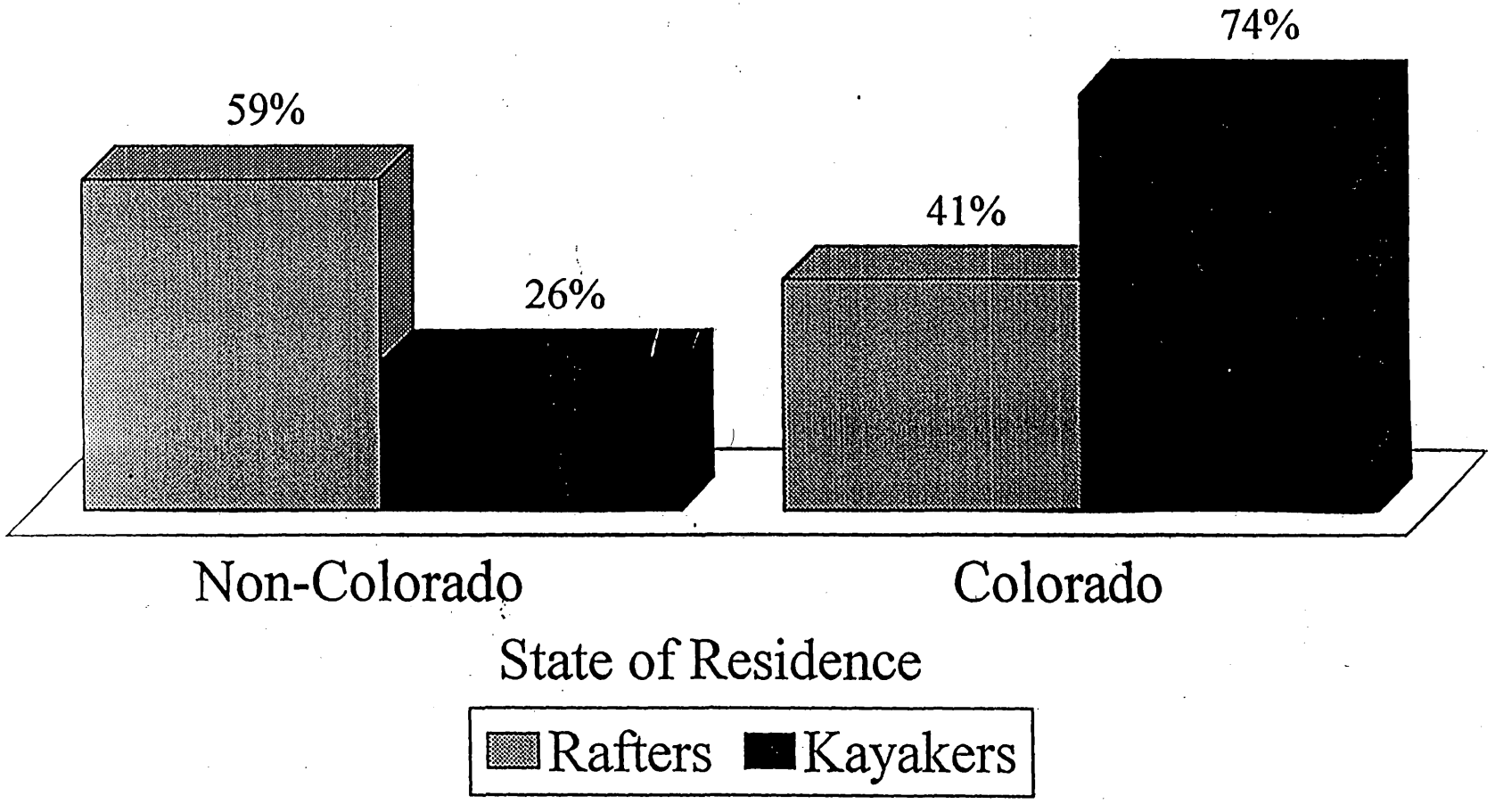


FIGURE 6

Party Size

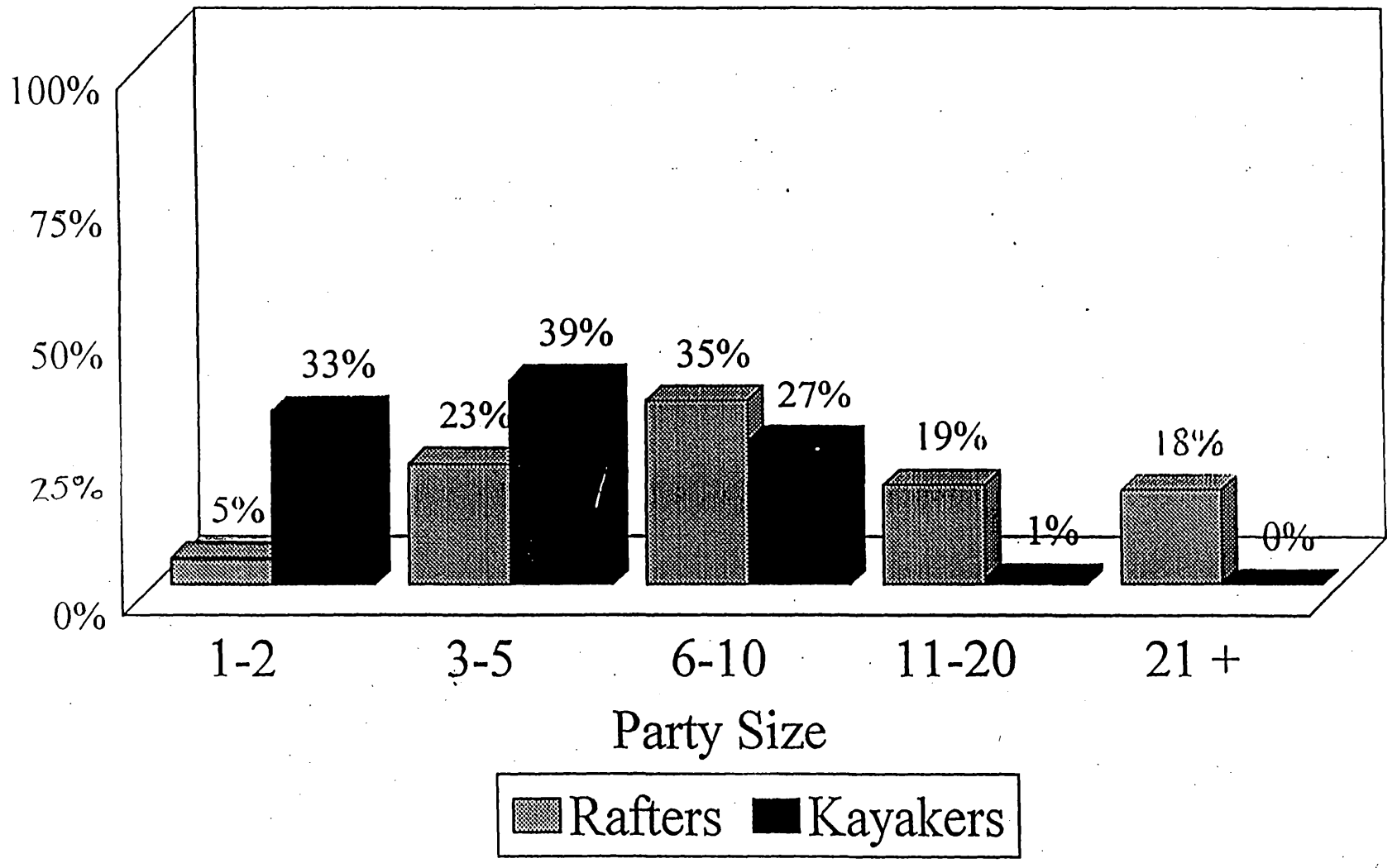


FIGURE 7

Type of Craft

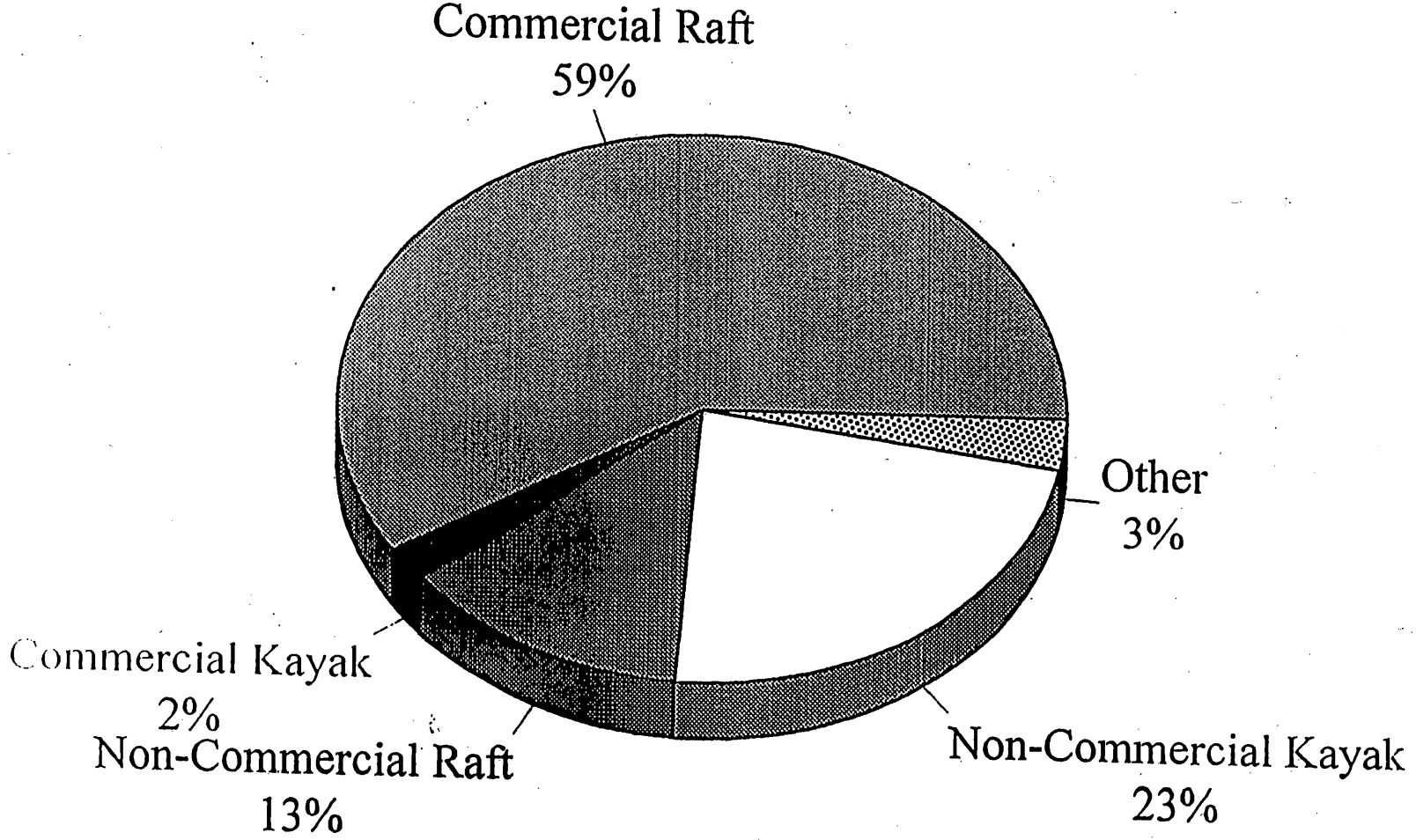


FIGURE 8

Type of Trip

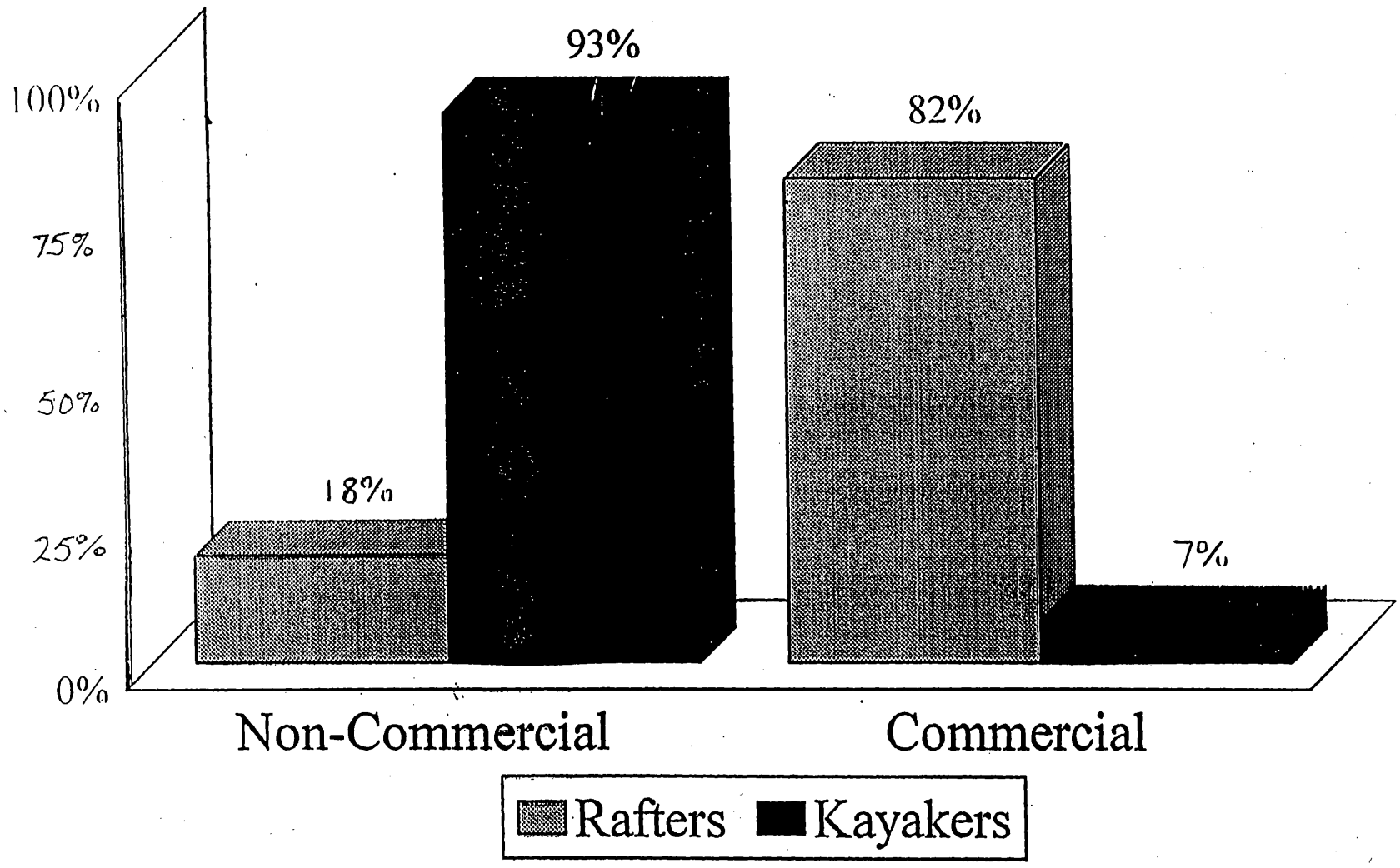


FIGURE 9

Total Number of Float Trips Experienced by Interviewee (respondent)

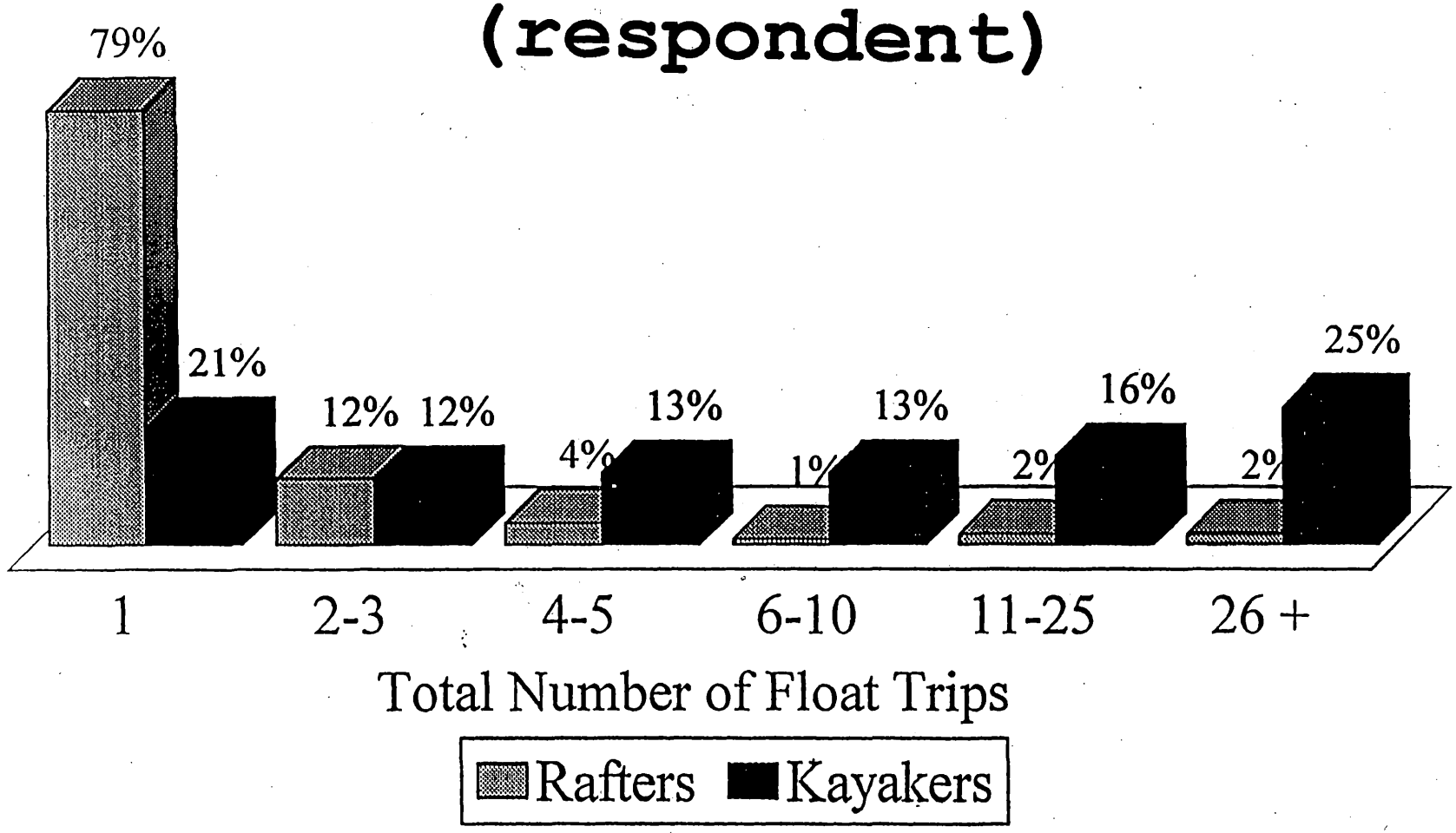


FIGURE 10

Number of Float Trips during the last 12 months Experienced by Interviewee (respondent)

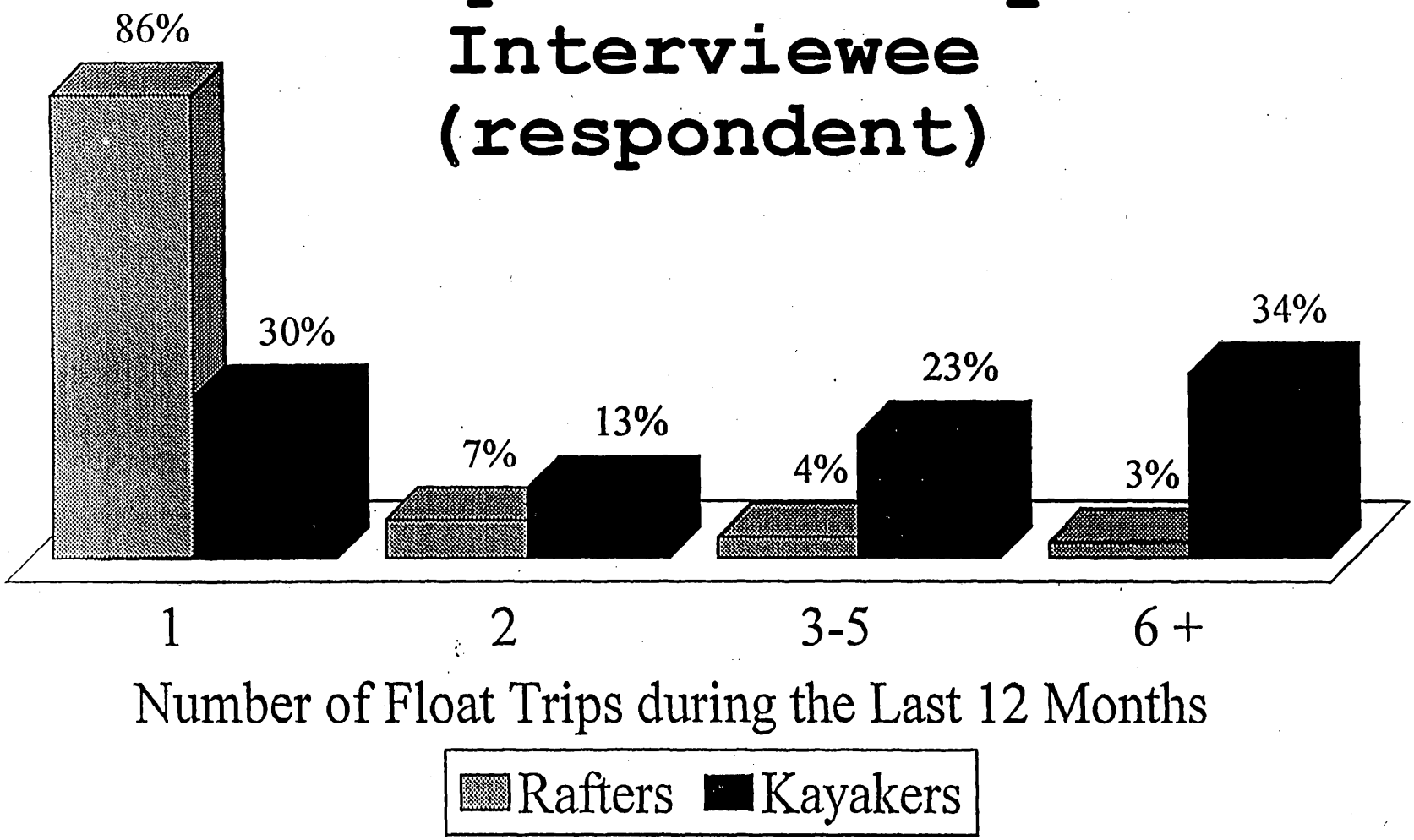


FIGURE 11

Social Impacts Due to the contrast of the type of users and their level of experience, this study broke out the social impacts into two groups; rafters and kayakers. The perceived crowding levels on the Cache La Poudre River is quite low with only 13 percent of the rafters and 38 percent of the kayakers reporting any perceived crowding of rafters (3 or more on a scale 1-9) see Figure 20. The perceived crowding by kayakers was significantly lower with only 7 percent of the rafters and 14 percent of the kayakers reporting any perceived crowding (3 or more on a scale of 1-9) Figure 21. The boaters responded that the maximum median number of rafters or kayakers it is okay to see while floating the Poudre River was 2 raft groups and 4 kayak groups. At the put in and take out locations the median number of acceptable numbers were 4 rafts and 5 kayaks.

The number of watercraft is well below negative social impacts on a national perspective. Table 7 highlights numerous similar studies of levels of perceived crowding with over 20,000 respondents studied in the past two decades by Vaske, Donnelly and Shelby. The Cache La Poudre respondents are very low overall especially considering its ROS setting of rural. The highest percentage of crowding was from kayakers seeing rafters on the river. The lowest on the other spectrum was of rafters seeing kayakers on the river. This illustrates why the two groups were stratified. The differences between the two users are prominent and thus it was necessary to separate during the survey.

Of particular interest for further development in research is the evaluation of anglers conducted in this study on Table 7. We initiated our survey of anglers in August when the water level lowered and it was difficult to interview many in the short time period thus only 89 anglers were surveyed. This low number is not statistically valid and thus analysis wasn't completed for anglers. The level of perceived crowding of anglers to other anglers lends itself to further study however.

Perceptions of the experience Satisfaction levels are quite high with the Cache La Poudre River boaters. The experience was rated "perfect" by 14 percent of the boaters and "excellent" by 50 percent. Twenty three percent rated their trip as "very good" and "good" was answered by 11 percent (Figure 12). There wasn't a significant difference between kayakers and rafters (Figure 13).

Figure 14 characterizes several items that represent river recreationists sentiment about important issues in planning and management. Six questions were asked about factors increasing enjoyment and there was substantial agreement between the floaters that natural setting of the river is valued highly. Assurance of water flows was rated the second most important item. Information from the guide was highly valued by rafters and understandably so not from kayakers. Access facilities, restrooms and human impacts followed in importance.

This studied cross tabbed the evaluation of water levels and satisfaction to get an overview of where water levels meet satisfaction levels. The Pineview Rock gauge was assessed daily and integrated into the data for assessment. There wasn't a significant difference between satisfaction levels of kayakers and rafters (Figure 14 and 15).

APPENDIX 1 CACHE LA POUDRE RIVER AND ANGLER SURVEYS

Overall Satisfaction

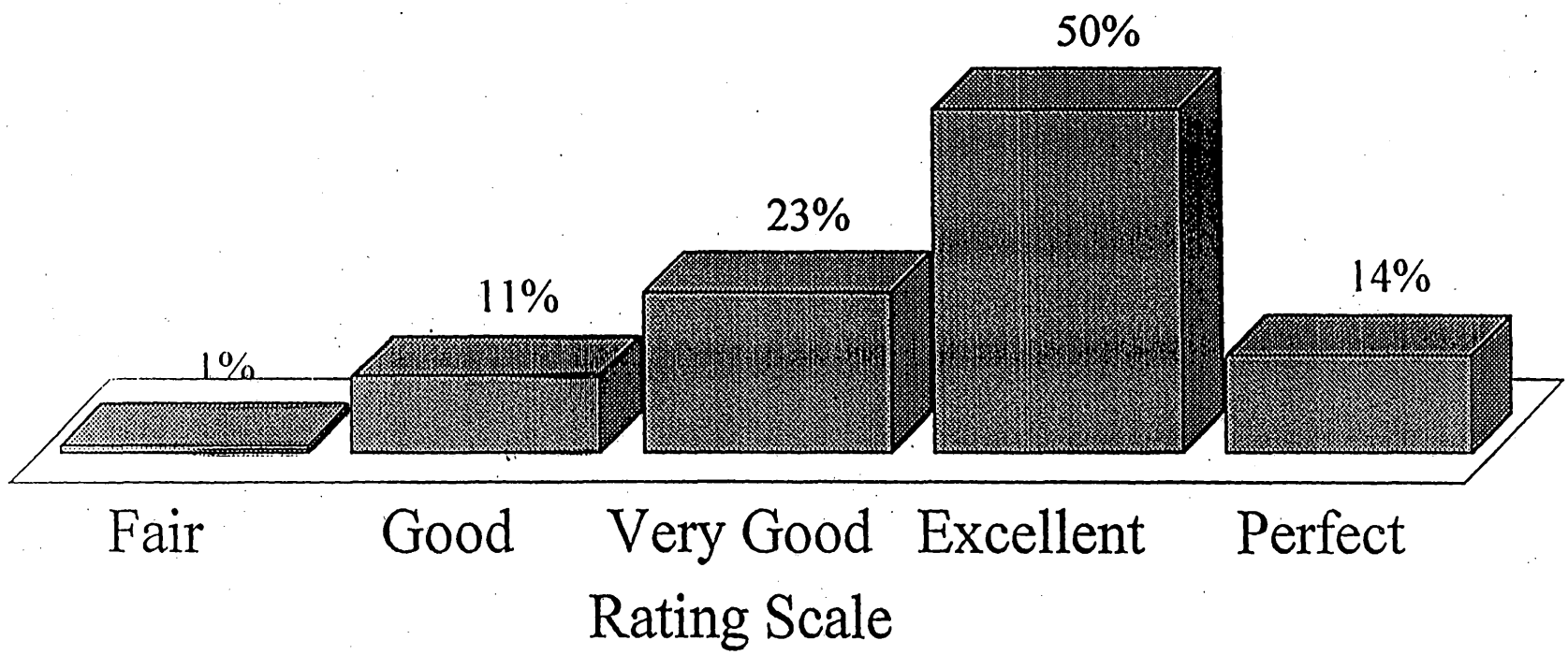


FIGURE 12

Overall Satisfaction

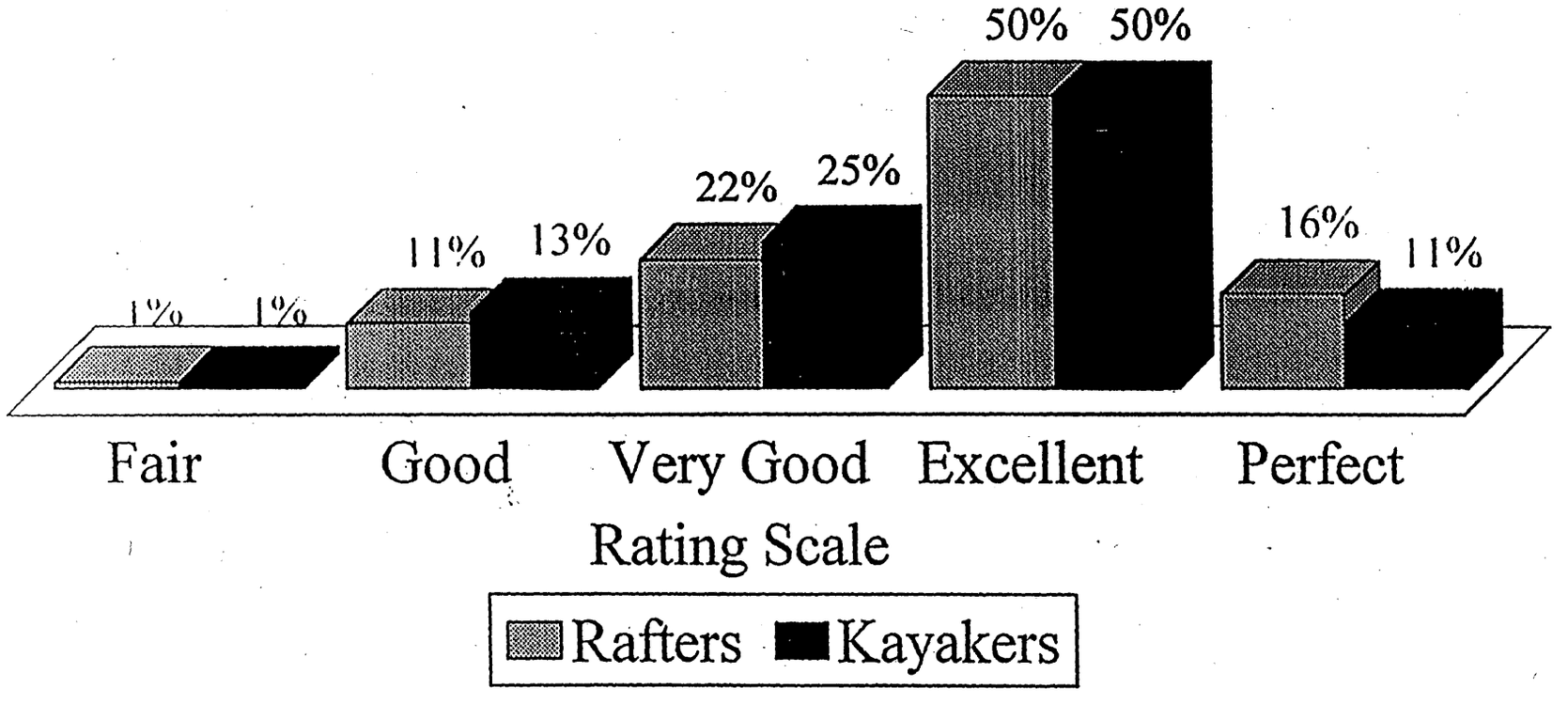


FIGURE 13

Factors Increasing Enjoyment

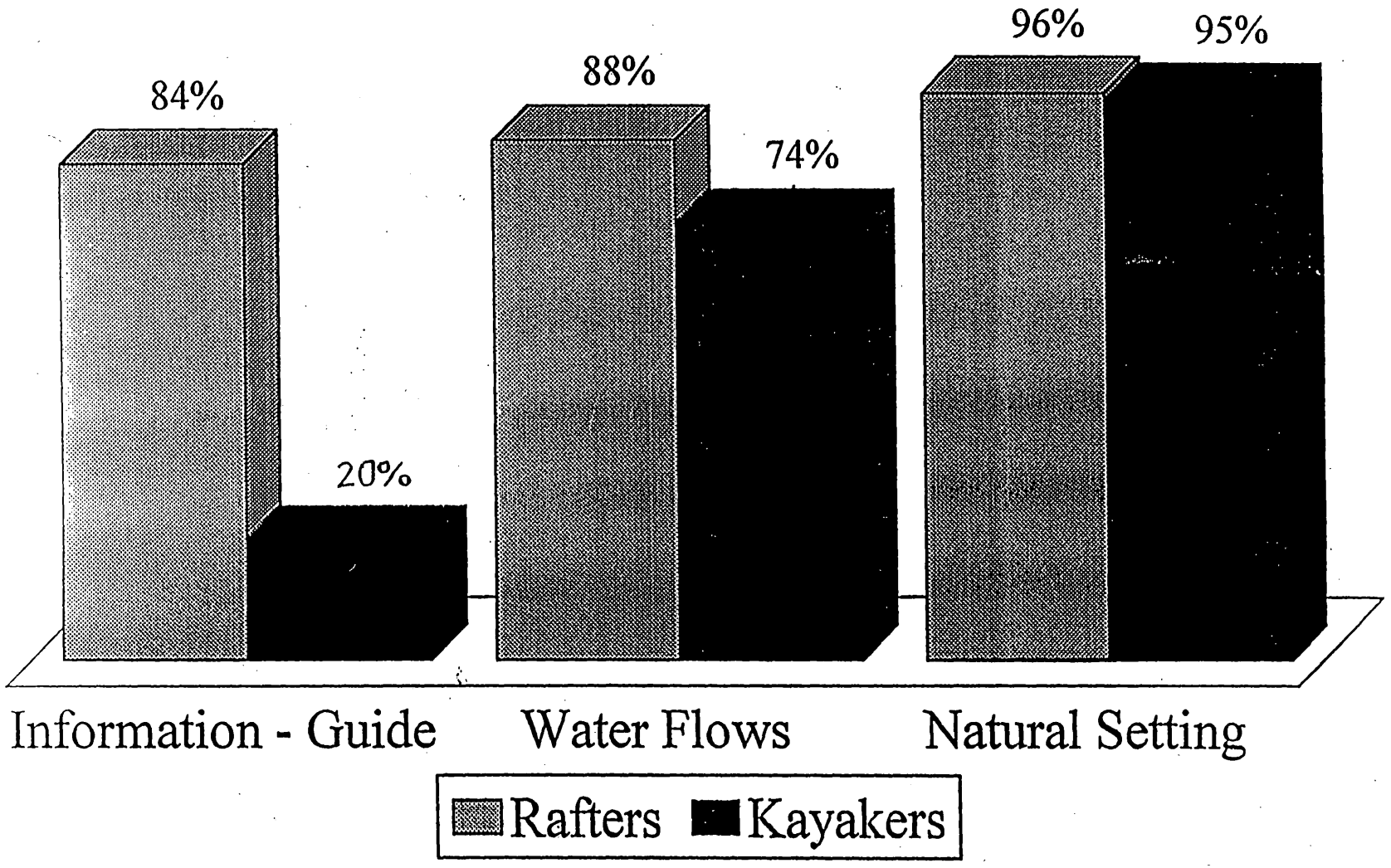


FIGURE 14

Water Levels and Satisfaction

Rafters Only

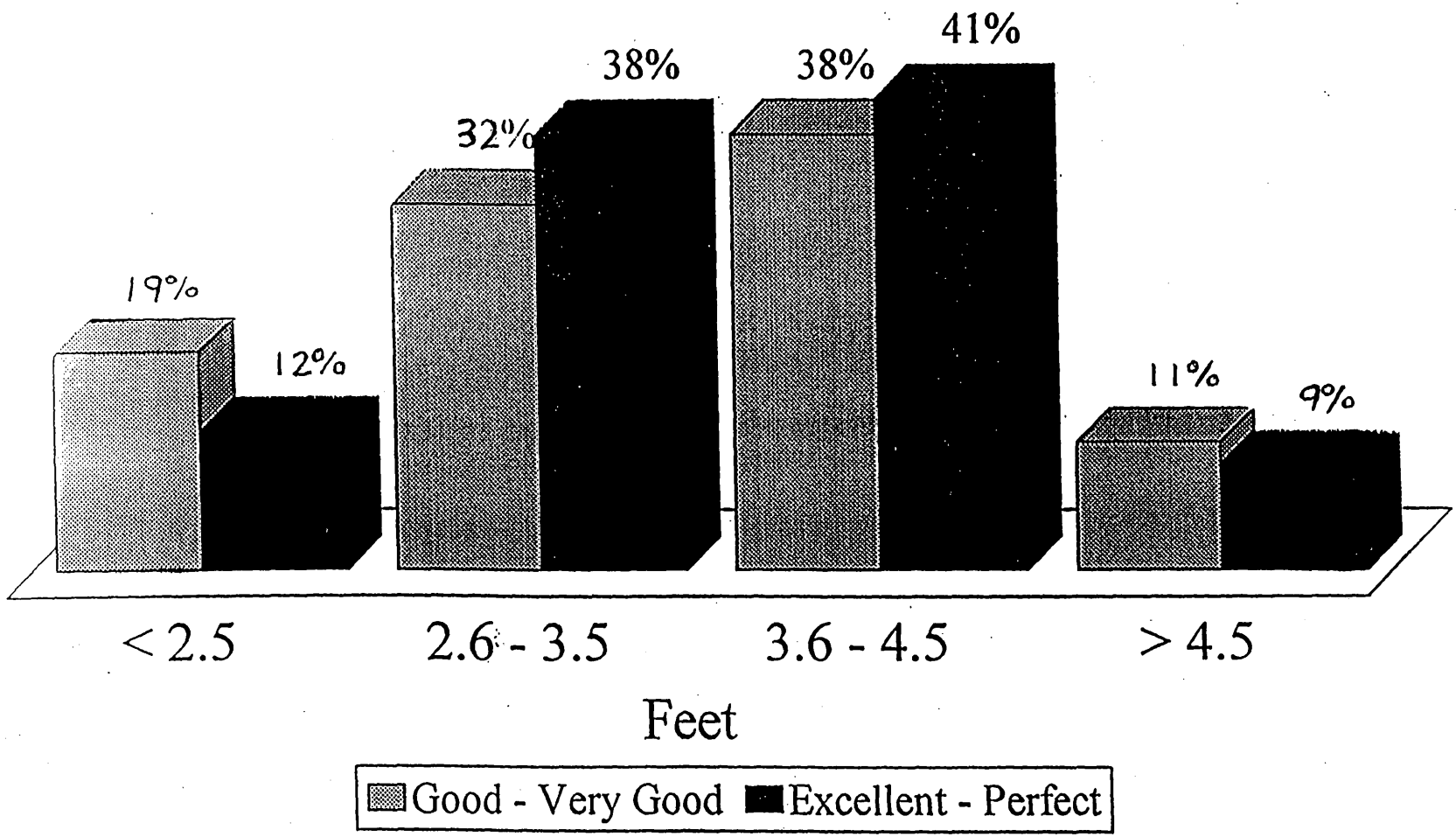


FIGURE 15

Water Levels and Satisfaction

Kayakers Only

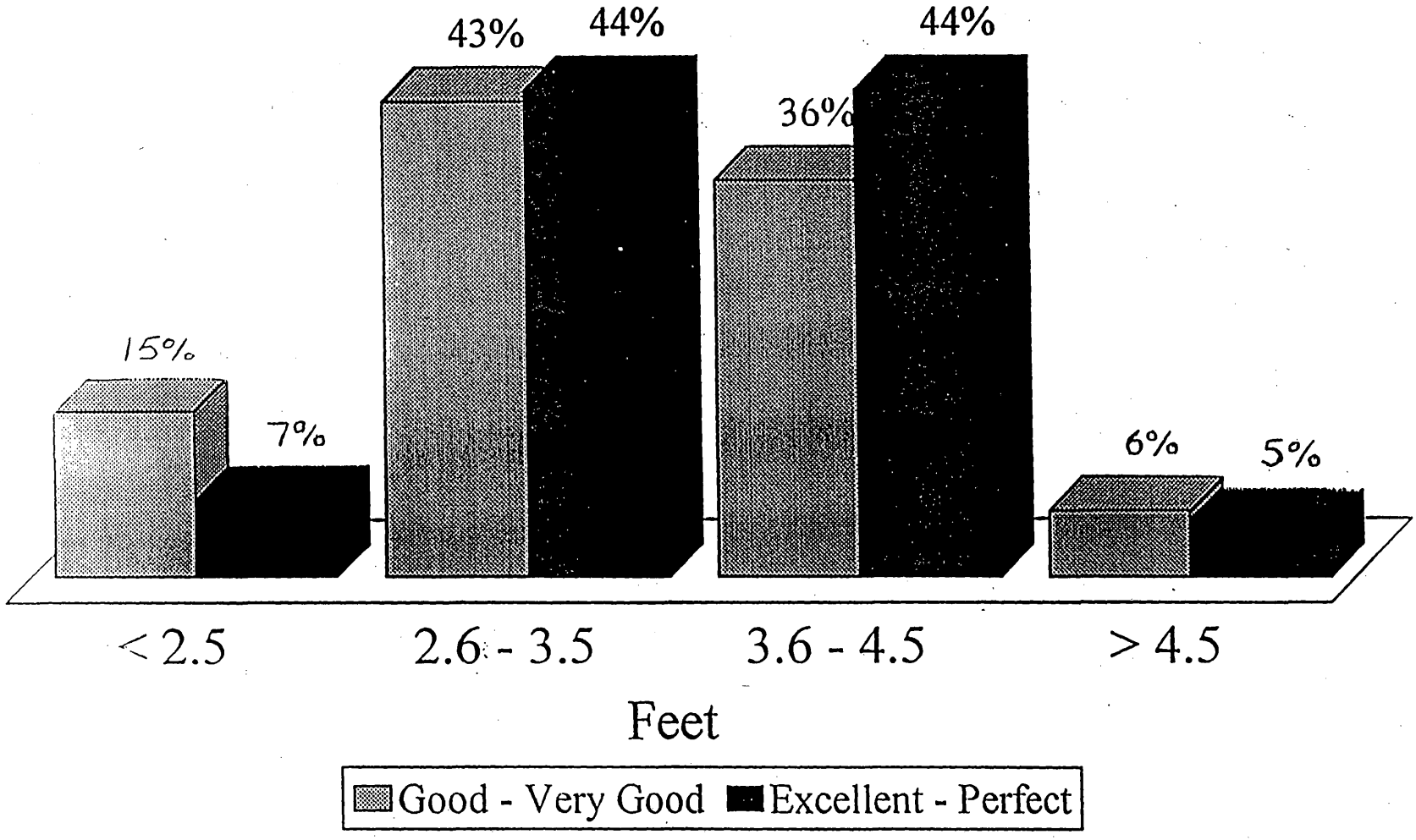


FIGURE 16

Reported Encounters with Rafters

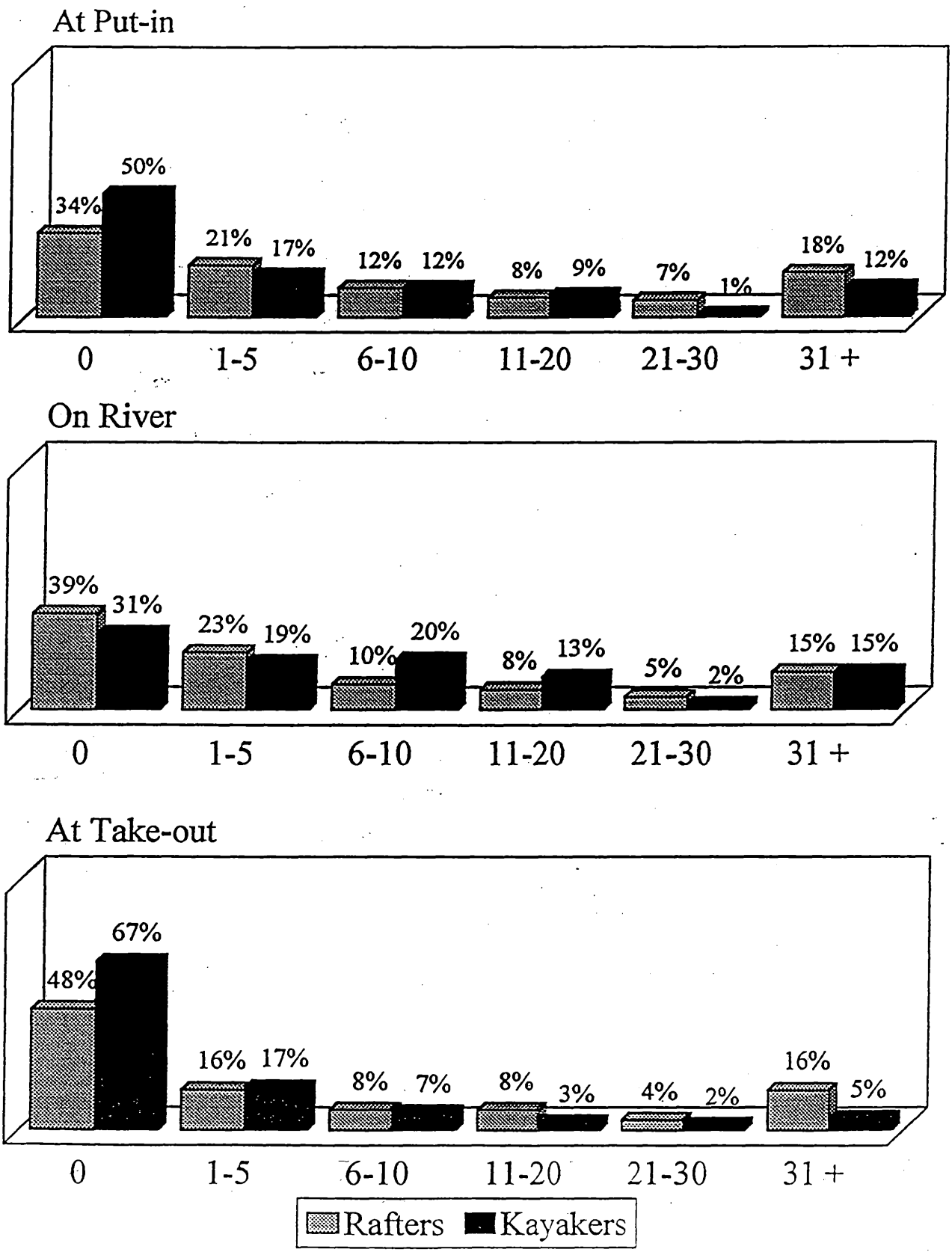


FIGURE 17

Reported Encounters with Kayakers

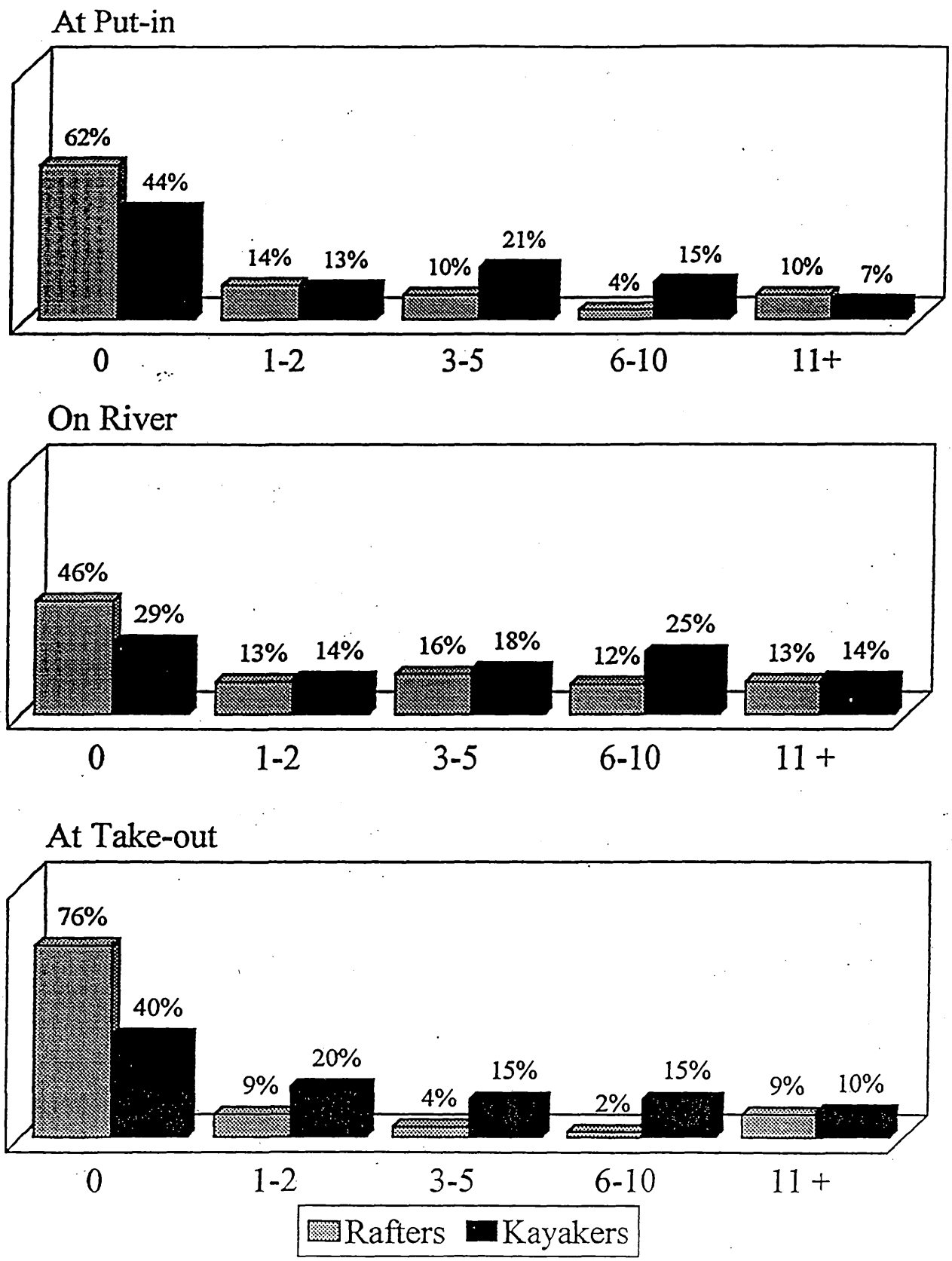


FIGURE 18

Perceived Conflict

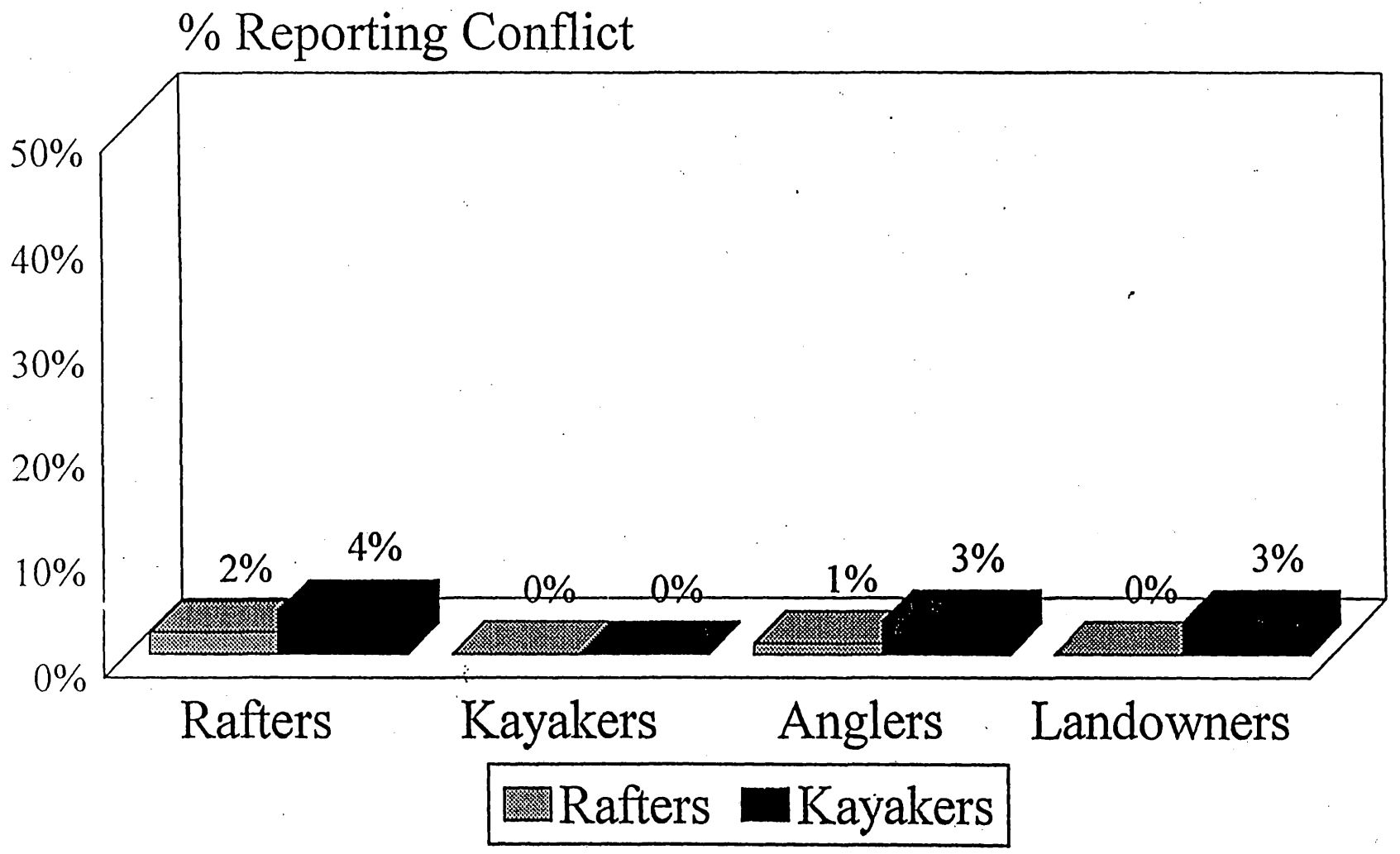


FIGURE 19

Crowding Scale

Did you feel crowded by the number of ***rafters*** at each of the following locations?

Did you feel crowded by the **number of rafters:**	Not at all Crowded		Slightly Crowded		Moderately Crowded			Extremely Crowded	
at the put in location	1	2	3	4	5	6	7	8	9
while on the river	1	2	3	4	5	6	7	8	9
at the take out location	1	2	3	4	5	6	7	8	9

TABLE 3

Crowding Perceptions - Caused by Rafters

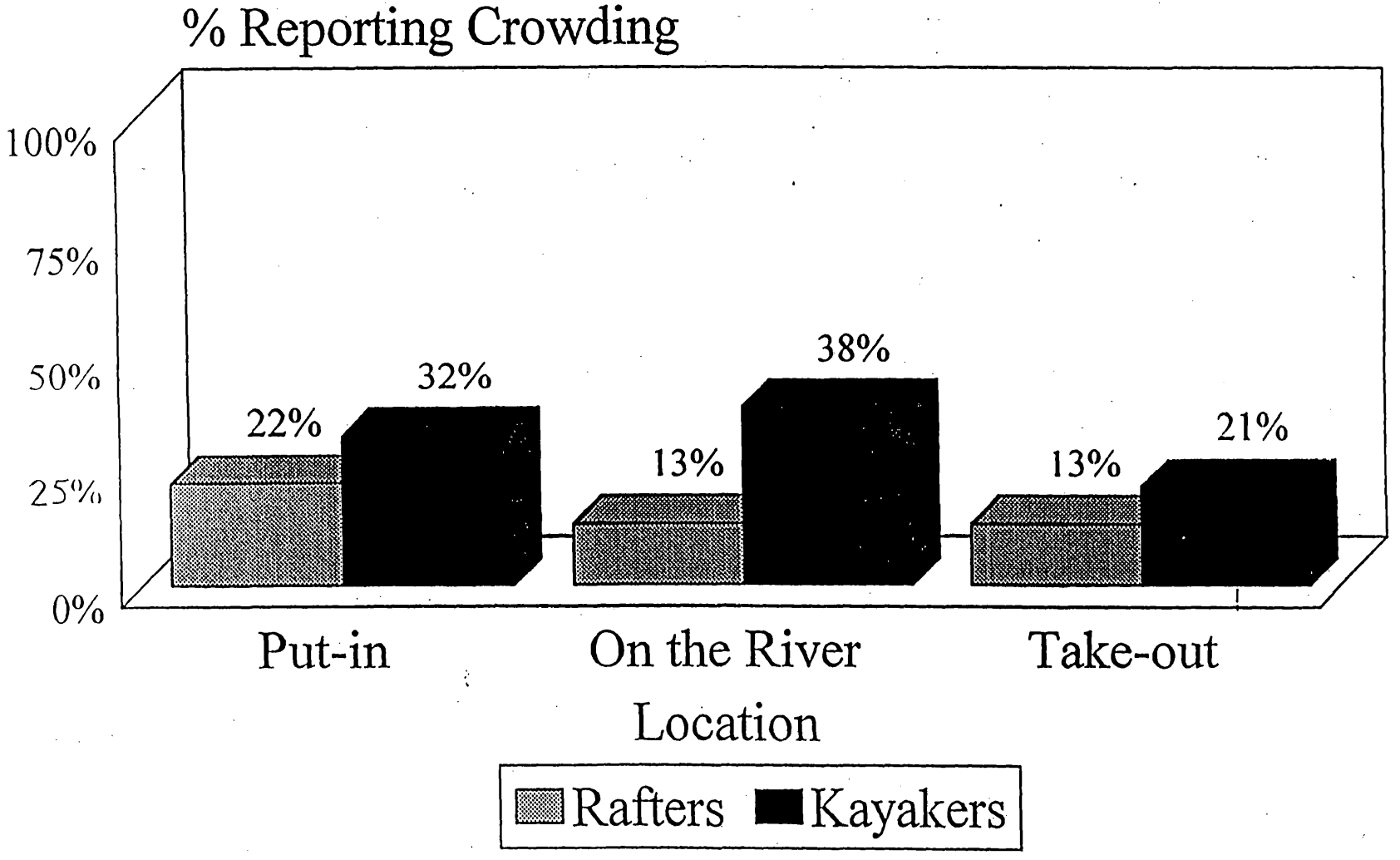


FIGURE 20

Crowding Perceptions - Caused by Kayakers

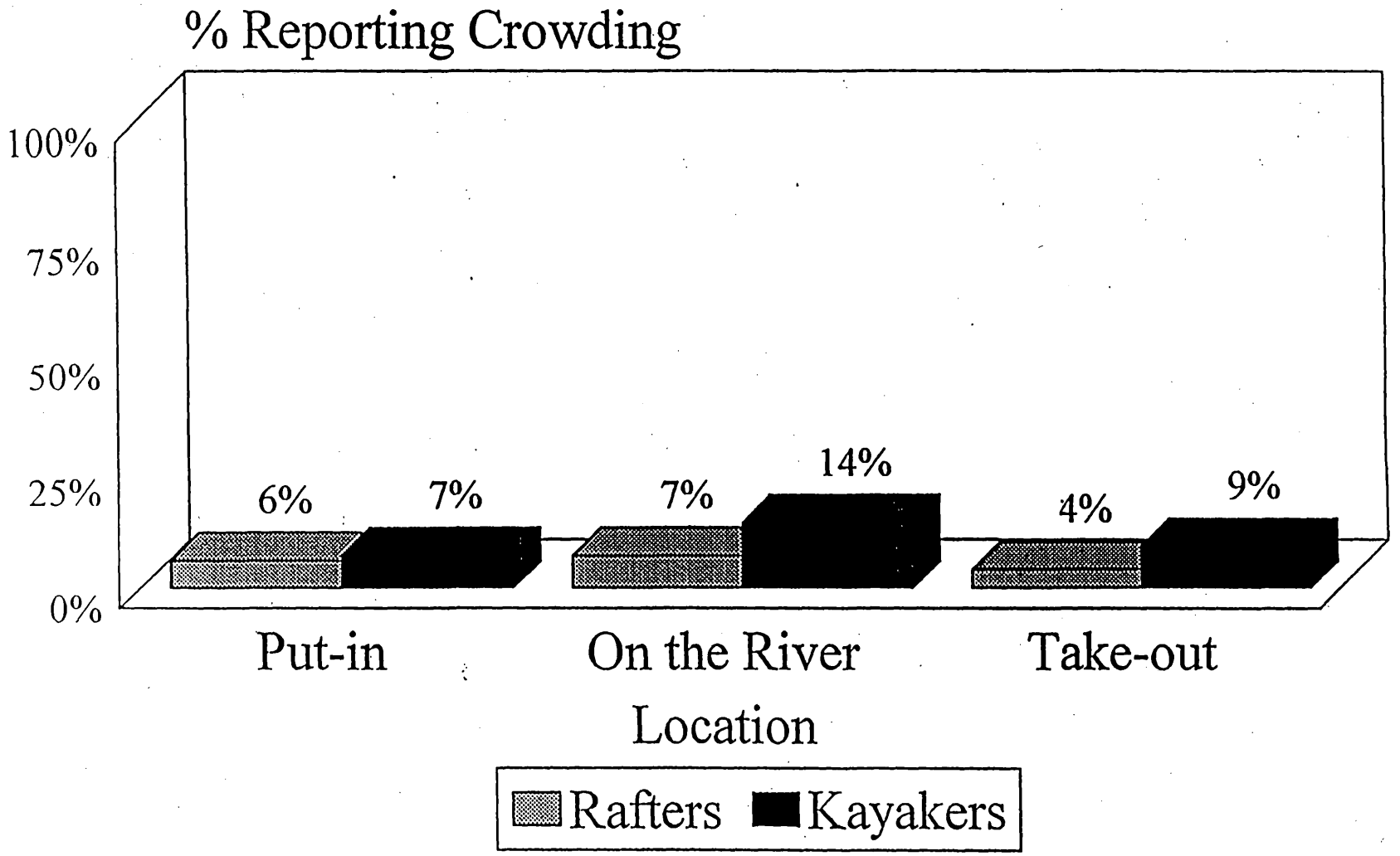


FIGURE 21

Carrying Capacity Judgments Based on Levels of Perceived Crowding

Percent Feeling Crowded	Capacity Judgment	Comment
0-35%	Suppressed Crowding	Crowding limited by management or situational factors, may offer unique low density experiences.
35-50%	Low Normal	Problem situation does not exist at this time. Similar to the above category, may offer unique low density experiences.
50-65%	High Normal	Should be studied if increased use is expected, allowing management to anticipate problems.
65-80%	Over Capacity	Studies and management necessary to preserve experiences.
80-100%	Greatly Over Capacity	Manage for high density recreation or *sacrifice area.*

Source: Shelby, Vaske, & Heberlein, 1989

TABLE 4

Normative Evaluations

Norms Standards individuals use for evaluating activities, environments, management proposals as good or bad, better or worse

What people think behavior ought to be

Question Format

What is an acceptable number of other ***rafters*** to have within eyesight while you are floating the river?

It is OK to have as many as _____ other rafters within eyesight while floating the river

_____ It doesn't matter to me

TABLE 5

Encounter Norms for Meeting Rafters

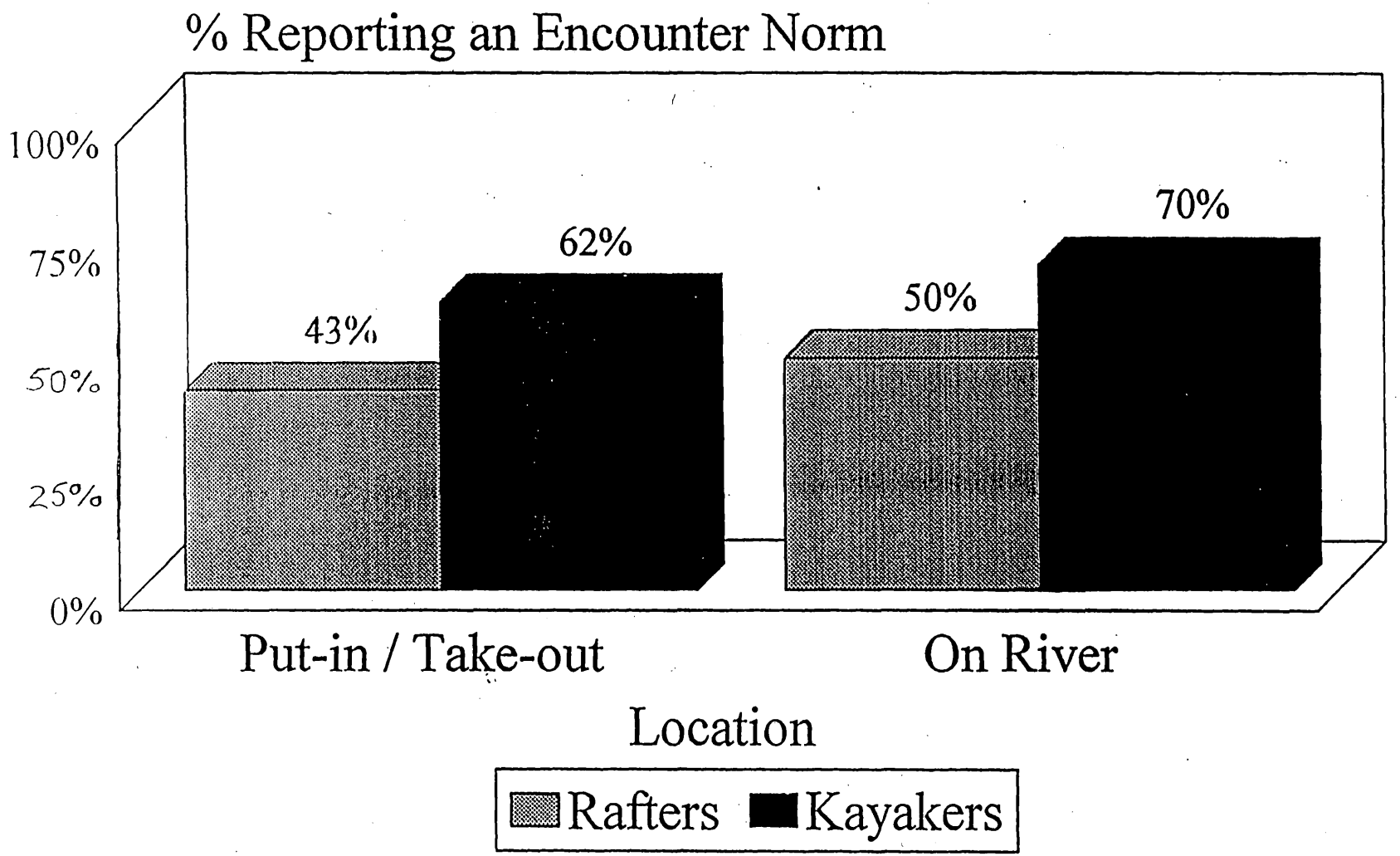


FIGURE 22

Encounter Norms for Meeting Kayakers

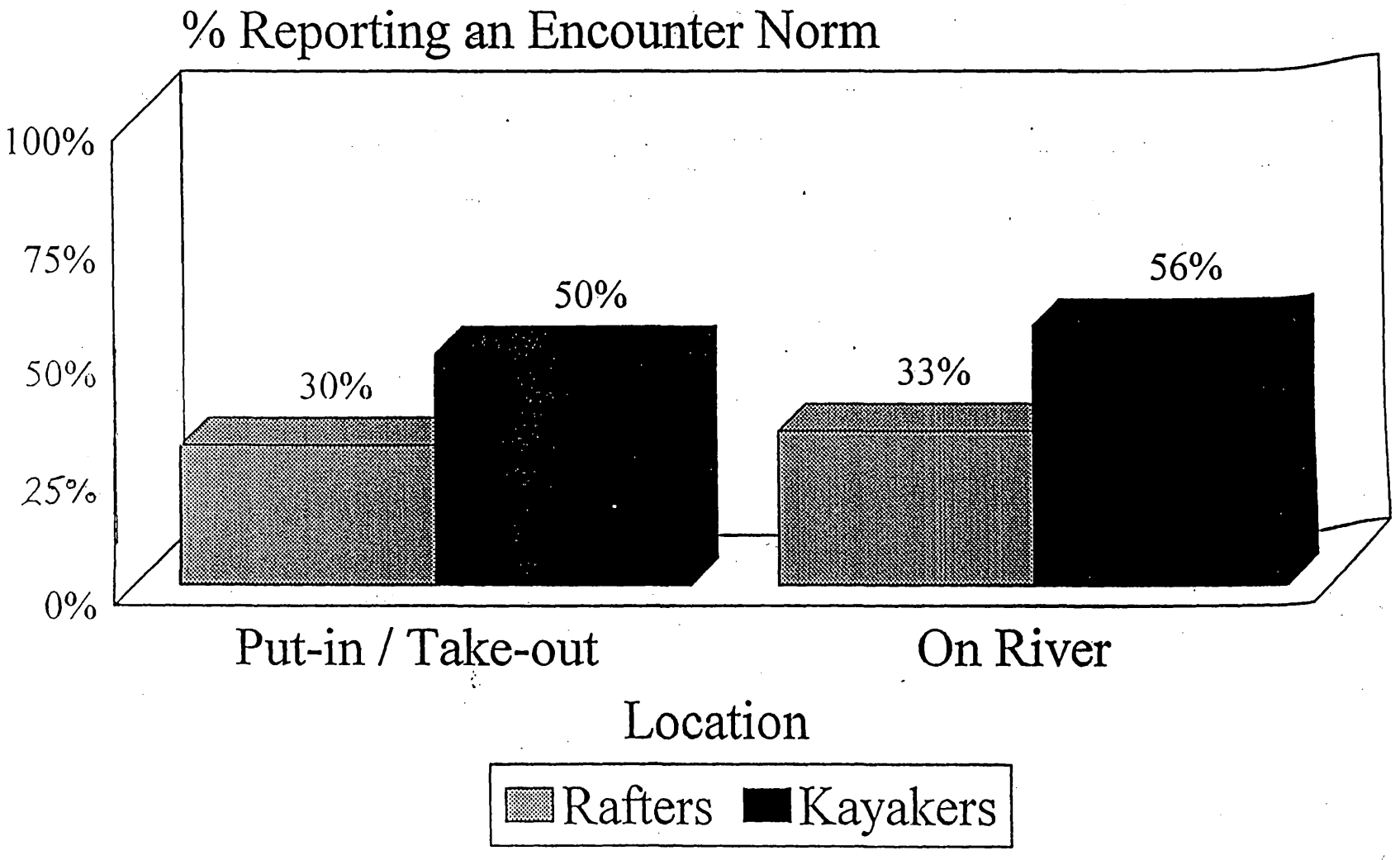


FIGURE 23

Norms and Perceived Crowding on the Poudre River

	Location of Encounter	Reported Contacts Compared to Norm: More Contacts	Reported Contacts Compared to Norm: Fewer Contacts	Mean Crowding Scores: More Contacts	Mean Crowding Scores: Fewer Contacts	t-value
Kayakers Evaluation of:						
Kayakers	Put-in / Take-out	6%	44%	2.5	1.3	2.27*
	on the River	18	38	2.6	1.5	3.90*
Rafters	Put-in / Take-out	17	45	4.9	2.1	6.55*
	on the River	42	28	3.5	2.1	4.56*
Rafters Evaluation of:						
Kayakers	Put-in / Take-out	2%	28%	2.2	1.3	3.24*
	on the River	7	26	2.4	1.2	5.14*
Rafters	Put-in / Take-out	12	31	3.2	1.6	6.93*
	on the River	17	33	2.3	1.5	5.26*

TABLE 6

...ing for different settings and resources

TABLE 7

% Feeling Crowded	Population	Resource	State / Province	Resource Condition / Type of Encounter
100	Boaters	Deschutes River	OR	Weekends Section 1
97	Boaters	Deschutes River	OR	Weekends Section 4
94	Anglers	Colorado River	AZ	Thanksgiving weekend
91	Boaters	Raystown Lake	PA	On the lake
89	Pheasant Hunters	Bong	WI	Opening day
88	Boaters	Deschutes River	OR	Weekdays Section 1
88	Boaters	Deschutes River	OR	Weekdays Section 4
87	Riparian Landowners	Lake Delavan	WI	Overall rating
86	Goose Hunters	Grand River Marsh	WI	Firing line
85	Pheasant Hunters	Public Hunting Area	WI	Opening day
78	Snowcoach Visitors	Columbia Icefield	Alb	In the developed facilities
76	Trout Anglers	Gun Powder River	MD	Opening day
75	Salmon Anglers	Waimakariri River	NZ	
75	Boaters	Raystown Lake	PA	At attraction sites
74	Salmon Anglers	Rakaia River	NZ	At river mouth
73	Canoers/Boaters	BWCA	MN	Moose Lake
72	Rafters	Grand Canyon	AZ	1985 Summer
70	Anglers	Klamath River	CA	
70	Climbers	Mt. McKinley	AL	
69	Boaters	Door County	WI	
68	Rafters	Rogue River	OR	
68	Rock Climbers	Seneca Rocks	WV	
66	Boaters	Raystown Lake	PA	At put-in location
63	Boaters	Raystown Lake	PA	At take-out location
62	Deer Hunters	Sandhill	WI	1988 High density hunt
61	Goose Hunters	Fishing Bay	MD	Firing line
61	Floaters	Wolf River	WI	
59	Salmon Anglers	Rakaia River	NZ	All anglers
57	Deer Hunters (Muzzle)	State-wide	MD	No specific resource
55	Deer Hunters (Bow)	State-wide	MD	No specific resource
57	Tourists	Mt. Evans	CO	
55	Wildlife Photographers	Sandhill	WI	
54	Recreationists	Lake Delavan	WI	One day visit
53	Deer Hunters (Gun)	State-wide	MD	No specific resource
53	Anglers	Brule River	WI	1975
53	Rafters	Grand Canyon	AZ	1985 Winter
53	Rafters	Snake River	OR	in Hell's Canyon
53	Backpackers	Mt. Jefferson Wilderness	OR	
52	Canoers	Brule River	WI	1975 Higher use
50	Deer Hunters	Sandhill	WI	1982 High density hunt
49	Backpackers	Eagle Cap Wilderness	OR	
48	Snowcoach Visitors	Columbia Icefield	Alb	At the turn around point
48	Pheasant Hunters	Bong	WI	Late season
46	Deer Hunters	State-wide	WI	No specific resource
45	Salmon Anglers	Rakaia River	NZ	Upstream
44	Turkey Hunters	State-wide	MD	No specific resource
43	Tubers	Brule River	WI	1975
42	Sailboaters	Apostle Islands	WI	1985
41	Tourists/Drivers	Stockings Park	MI	
40	Tourists	Columbia Icefield	Alb	Toe of the glacier
40	***Anglers***	***Poudre River***	***CO***	***Evaluations of rafters***
40	***Anglers***	***Poudre River***	***CO***	***Evaluations of other anglers***
39	Backpackers	White Mt. Nat. For.	NH	Presidential Range
38	Floaters	Klamath River	CA	
38	***Kayakers***	***Poudre River***	***CO***	***Evaluations of Rafters on the River***
37	Canoers	Brule River	WI	1985 Lower use
32	Anglers	Colorado River	AZ	Midweek
31	Hikers	Dolly Sods Wilderness	WV	Low use period
31	Elk Hunters (Bow)	Limited Permit Mgt Units	CO	Evaluations of non-hunters
30	Snowcoach Visitors	Columbia Icefield	Alb	On the ice road
29	***Anglers***	***Poudre River***	***CO***	***Evaluations of kayakers***
28	Elk Hunters (Bow)	Unlimited Permit Mgt Units	CO	Evaluations of other bow hunters
27	Goose Hunters	Tuckahoe State Park	MD	Low density dispersed hunt
26	Rafters	Illinois River	OR	
25	Trout Anglers	Savage River	MD	Lower use period
25	Elk Hunters (Bow)	Limited Permit Mgt Units	CO	Evaluations of non-bow hunters
24	Backpackers	Great Gulf Wilderness	NH	Low use period
24	Deer Hunters	Sandhill	WI	1982 Low density hunt
25	Elk Hunters (Bow)	Limited Permit Mgt Units	CO	Evaluations of other bow hunters
23	Elk Hunters (Bow)	Limited Permit Mgt Units	CO	Evaluations of bow hunters
23	Trout Anglers	Gun Powder River	MD	Late season
20	Elk Hunters (Bow)	Unlimited Permit Mgt Units	CO	Evaluations of non-hunters
19	Elk Hunters (Bow)	Unlimited Permit Mgt Units	CO	Evaluations of non-bow hunters
17	Goose Hunters	Grand River	WI	Managed hunt
14	***Kayakers***	***Poudre River***	***CO***	***Evaluations of other Kayakers on the River***
13	***Rafters***	***Poudre River***	***CO***	***Evaluations of other Rafters on the River***
12	Deer Hunters	Sandhill	WI	1988 Low density hunt
7	***Rafters***	***Poudre River***	***CO***	***Evaluations of Kayakers on the River***

Chapter VII

Implications

General The key to this study was focused on characterizing river use of boaters and measuring the difference in user perception of the river recreation experiences associated with boating. Identifying the level of change appropriate and acceptable to the river users was also another aspect of this investigation. The approach to this process was accomplished by measuring individual user preferences and developing a group standard for assessment from user responses. This study included specific questionnaire items used to measure social carrying capacity variables helpful in planning for the future as use increases and approaches capacity.

The monitoring and evaluation of river recreation will be based from this study by using this input to decide what changes should occur, how much change will be allowed, what management actions are needed to guide and control it, and how managers will know when the established limits are being or have been reached. This is based on the Limits of Acceptable Change concept (LAC).

Through the systematic application of this investigation, the Forest Service is able to use the results from this study as a tool for developing management strategies. On going monitoring is essential to relate use levels with resource conditions and capacity. The statement of Jack Ward Thomas before the Committee on Natural Resources concerning "New Directions for the Forest Service" indicated a temperament that there is a growing perception that, with enough science, we can find a solution to any resource management problem. Thomas indicated that through

science, we can describe options and provide assessments of their consequences. But science is only a tool. All managerial decisions in the end are value laden, not technical. This study exhibits how the science (survey) was integrated into the value arena by highlighting the results in several public meetings in January 25 and 27.

Jack Ward Thomas also featured key elements of ecosystem management; consistent monitoring effort, an evaluation of management outcomes, and where necessary, adapting our management to incorporate new information from the monitoring, the scientific community, and the public. **This microcosm example of the Poudre River study exemplifies the integral nature of employing ecosystem management principals; consistent monitoring, use of good science, collaborative management, and developing proactive programs to establish desired outcomes.** From the initial river management plan, university studies to indicate our current user perceptions, collaborating with the public to find out their needs and desired outcomes, and changing our methodology of user allocation i.e. daily service day limits versus annual the outcome has been a knowledgeable customer preference and expectation.

The monitoring prescribed in this study will be based, whenever possible, upon the Limits of Acceptable Change concept (LAC). The primary emphasis of the LAC system is on the desired resource condition, rather than on how much use or abuse an area can tolerate (carrying capacity). The management challenge is not one of how to prevent any human-induced change along the river, but rather one of deciding what changes should occur, how much change will be allowed, what management actions are needed to guide and control it, and how managers will know when the

established limits are being or have been reached. Federal law mandates protection of the outstanding remarkable values that assessed the Poudre to be eligible and designated in the National Wild and Scenic River System. The three outstanding remarkable values; recreation, scenery, and hydrologic are the key resource values to be maintained and enhanced for perpetuity.

Value to be maintained and enhanced	Key indicator	Management standard to be used	Management actions triggered if standard is not met	Sampling procedure and frequency
River Recreation **Wild** section Big South of the Poudre	Numbers of groups of kayakers (visitor counts) Numbers of encounters with other kayakers Group size Impacts from kayaks portage waterfalls	Not to exceed 24 a day Kayakers do not encounter more than one other group No more than 6 per group	A combination of in-direct (information, education, signing, etc) and direct (patrols, site and road closures, seasonal restrictions, permits, etc) management actions and controls would be utilized emphazing indirect methods first then move into direct with public involvement	5 times during the season and at least 2 days on weekends

Value to be maintained and enhanced	Key indicator	Management standard to be used	Management actions triggered if standard is not met	Sampling procedure and frequency
River Recreation **Recreation** section of the Poudre	Encounters per trip with other float parties	2 Commercial trips 4 Non commercial trips	A combination of in-direct (information, education, signing, site design etc...) and direct (enforcement, patrols, site closures, seasonal restrictions, launch windows, permits, group size limits) management actions and controls would be utilized emphazing indirect methods first.	Continue implementing and developing monitoring program and keep a record of changes over time.
	Time waiting for ingress and egress	10 minutes 80% of the time		
	Daily limit outfitters	100 per weekend 120 per weekday		
	Outfitter launch windows	1 violation of launch window per month by each outfitter		
	Conflicts	Four registered conflicts per season with river ranger		
	Number of days parking lots exceeded capacity	Not to exceed these numbers more than 3 days per season		
	Visitor satisfaction	No reports of poor experience only 10 reports of fair experience per season		
	Crowding reports	Less than 39% of kayakers Less than 15% of rafter report any crowding		

Value to be maintained and enhanced	Key indicator	Management standard to be used	Management actions triggered if standard is not met	Sampling procedure and frequency
Water Quality	Fecal coliform	A log mean of 200 fecal coliform per 100 millimeters	Identify possible sources of effluent. Increase and intensify sampling.	Grab sample taken below Rustic, Narrows, and Poudre Park PG. Twice during the summer season.
	Aquatic life	Useful biocumulators, look under rocks at specific points		Obtain Platte River Basin Reports from USGS station #06752000 contact David Litke (303) 236-4882
	pH	Maintain pH between 6.5 and 9.0		
	Chemical (oil and gas) and heavy metals	No detectable oil and gas and no increase in heavy metals or chemicals.		Note: 1. Keep it simple and easy for sampling. 2. Keep it reasonable for sampling costs. 3. Understand the targets to which the indicators are coming from.
	Note: Review USGS Water Quality Data in Appendix 5.			

Value to be maintained and enhanced	Key indicator	Management standard to be used	Management actions triggered if standard is not met	Sampling procedure and frequency
Scenic Quality	Projects, activities or modifications which alter landform, vegetation, water, color or character of the viewshed as seen from the river and highway 14 Extent and amount of developments as indicated by buildings and other structures	Maintain a minimum of 100 feet setback from center of Hay 14 and from the center of river. Minimum lot size of 10 acres Maximum height structures 40 feet Revegetate at least 2 areas a year that have been disturbed by human activities	Management activities or developments not consistent with Wild and Scenic River classifications, visual resource management objectives, or Larimer County zoning requirements will be modified or proposals rejected.	Individual projects will be analyzed on a case by case basis to ensure protection of the viewshed and compliance to standards. USFS River manager will initiate at least 2 revegetation projects a year (with partners)

Chapter VII

Summary

Integrating ecosystem management along the Cache La Poudre River is in its infancy. This is a continuous process with collaboration and monitoring constantly developing. We need start to "do it" with the standards and indicators set forth and improve the actions and cultivate as it grows. This study has provided a framework to be complimented to the Wild and Scenic River Plan. It is also a progression from the Clemson paper by Kurtz "Methodology for Determining and Allocating Carrying Capacity in a Roaded Natural River Corridor" 1988.

The first strategy was obtaining current and past data, to be integrated into a limits of acceptable change methodology. Incorporating social science into the human dimension continues the context and dialogue for making informed decisions externally and internally. This is the next step to be taken. A working group will be formed soon to continue the process. Presently, the prescribed monitoring plan in Chapter VII Implications used both data and professional judgement and it will be modified as the monitoring program advances. The monitoring program was developed from the resource user data highlighted in Chapter VI Results and management consensus. However, it needs the dimension of a working group to tie it all together for continued collaboration. For example in River Recreation setting encounters per trip to 6: more specifically 2 commercial and 4 noncommercial comes from page 51 figure 17 where 72% of the users encounters 6-10 or less while on the river. Will the working group agree to this number? That will be part of the evolving

process.

The indicators and standards set for river recreation will open up the dialogue to be integrated with managers and users. A Poudre River working group will now be initiated originally called for in the wild and scenic river plan. This group will participate in a forum to help decide what controls to use for the future fate of this unique river corridor.

Recently, the rate of change and complexity of issues along the Poudre has instigated the push for a working group, as well as the strong input from the Clemson Review team passed on to the district ranger, recent newspaper articles, and whitewater boating deaths.

This working group will help set the framework for changes on the proposed indicators and standards. We need to provide opportunities for better communication to give the community control over the fate of the Poudre River. The monitoring program set forth in the previous chapter **may change** with the input of the working group. In ecosystem management humans play an important role in setting land management policy. Using the data from user surveys, collaboration with groups and bringing in their values as well as managers and planners will open up better dialogue for developing proactive programs which are all a part of ecosystem management.

Rocky Mtn News
July 4, 1994

Cache La Poudre's popularity threatens the integrity of the northern Colorado waterway

Fans hope to keep river wild and scenic

By Kevin McCullen
Rocky Mountain News Staff Writer

CACHE LA POUDRE RIVER — A new wave of popularity is flowing through Colorado's first wild and scenic river.

Long renowned among fly fishermen, northern Colorado's Cache La Poudre River has become a destination for kayakers and rafters eager to savor some premier white water.

Trails in the adjacent Roosevelt National Forest and three adjoining wilderness areas are attracting more hikers and cyclists. And motorists are finding a drive through scenic Poudre Canyon an irresistible escape.

U.S. Forest Service staff and other users who love this alluring river want to ensure the Cache La Poudre remains worthy of its eight-year-old designation as a wild and scenic river.

This year, the Forest Service limited the number of daily commercial raft trips as part of a new management plan, said Martha Moran, outdoor recreation planner for the Estes-Poudre ranger district.

In the next two years, the Forest Service plans to prohibit "dispersed," or improvised roadside camping, as major renovations are completed at two large campgrounds.

Moran said the Forest Service will form a "focus group" of users to guide planning efforts and grapple with some of the expected problems along the river corridor, including parking.

"There's definitely some things we will have to look at in the future," she said. "Our concern is how much use is too much to threaten the integrity of the Poudre."

Moran and others are striving to follow the mandate of the wild and scenic river designation, which requires that all or part of such a river be free-flowing and have an "outstanding remarkable value."

Nearly 75 miles of the Cache La Poudre, including 26 miles classified as wild, were added in 1986 to the National Wild and Scenic Rivers system. From its headwaters in Rocky Mountain National Park, the Cache La Poudre — which took its name from French fur trappers — flows down Poudre Canyon and through Fort Collins.

"The river has always been a lifeblood of this community," said Tom Shoemaker, director of Fort Collins' Natural Resources Division.

Because of the river's wild designation, the Forest Service must manage the river to protect it and provide recreational opportunities. The river corridor can become busy some days, but a survey conducted by the Forest Service of rafters, kayakers and fishermen last year found few users who believed the river to be overcrowded, Moran said.

Colorado Journal

A new management plan began this year for the six commercial rafting and kayaking outfitters on the river, in response to steady growth. There were 21,415 commercial passengers on the river last year, compared with 19,355 in 1992 and 8,581 in 1989.

This year, rafting outfitters are limited to no more than 125 passengers each weekday and 100 on a weekend. The size of each commercial group cannot exceed 50, and rafting companies also have staggered daily launch times to ensure the river remains uncluttered.

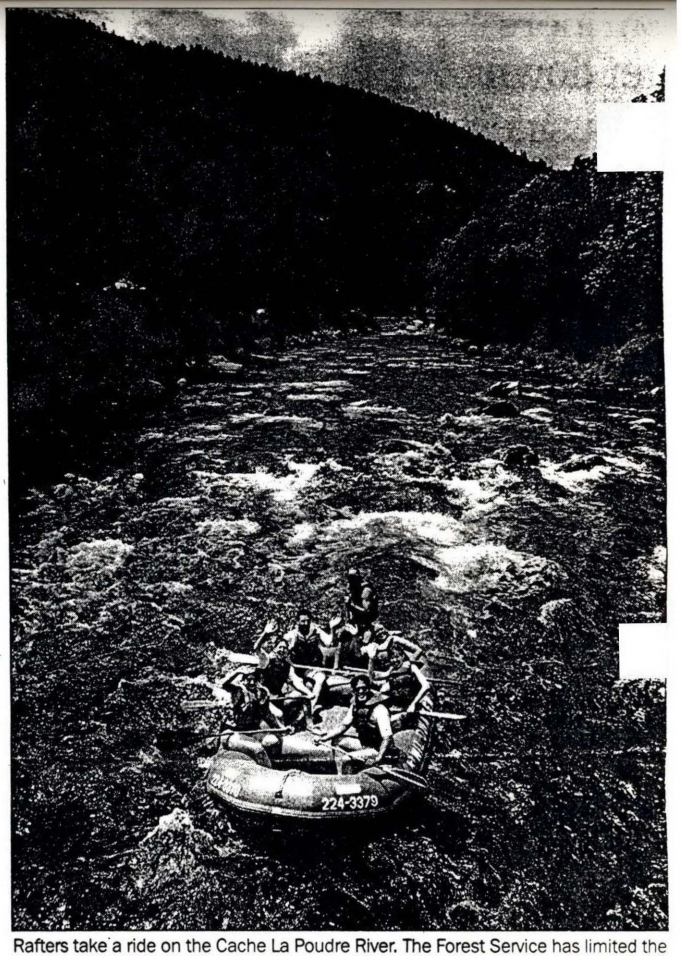
Robert Breckenridge, owner of A-1 Wildwater, said the new regulations are working. He said his company has been forced "to turn people away nearly every day. Most of us are running at our limit."

"The river's not crowded. It's definitely a selling point because it's a nice experience, and it's scenic," he said.

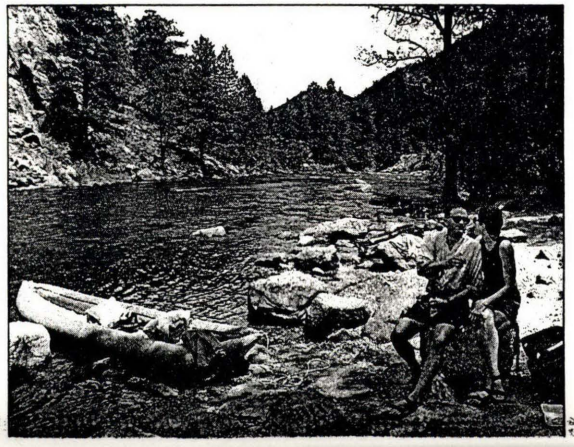
Sections of the Cache La Poudre are considered among the best white water in Colorado. But the river also can be deadly: A Boulder kayaker died last month after he became trapped under water next to a bridge abutment.

Low water levels this year are expected to curtail the boating season several weeks earlier than normal. Veteran river runners including Pat Legel, owner of Wanderlust Adventures, have learned to weather the gushes and trickles of the Cache La Poudre.

"For me," Legel said, "the river is kind of magical. It has a mesmerizing effect."



Rafters take a ride on the Cache La Poudre River. The Forest Service has limited the number of daily commercial raft trips as part of a new management plan.



Jimmy Carter and Susan Graves of Boulder picnic during a break in their raft trip down the Cache La Poudre River. The river has some of the best white water in Colorado. It can also be dangerous: A kayaker died last month after he was trapped under water.

River ranger prefers to educate rather than discipline visitors

CACHE LA POUDRE RIVER — Margaret Strom often gets a particular reaction when she paddles toward people along the Cache La Poudre River.

"They always reach for their fishing licenses. It's good to see people have their licenses, but I'm not interested in that," she said.

Strom, a U.S. Forest Service river ranger, does want to ensure that visitors to the river know the rules.

Nearly every day she patrols the Cache La Poudre and often stops to chat with kayakers or fishermen.

A seaonal employee, Strom also observes rafting outfitters to ensure they are following guidelines for scheduled [illegible]. She also stops along regulations, to talk to kayakers about river routes or to pick up litter.

"A lot of people stop me to ask about the river," Strom said. "I've been overwhelmed by the support I've received from people. I'm on the river with them.

"Instead of patrolling along the shore and having people pull up to me, I'm right there with them," she said. "I think it's easier to educate people rather than sit and write them a ticket."

This summer, Strom will help survey river users for a Forest Service evaluation of how the agency is meeting demands of recreation.

In the fall, she hopes to help organize a cleanup to remove lawn chairs, signs, sign posts and other debris from the

CHAPTER VIII

LITERATURE CITED

Anderson, Fletcher. "Thirst Quenchers: Four Hidden Treasures in the Desert Southwest." River Runner Magazine, February 1989: 30-33.

Becker, R., Jubenville, A., Burnett, G., "Fact and Judgement in the Search for a Social Carrying Capacity," Leisure Sciences, 1984: 6:4 475-486.

Boteler F., "Carrying Capacity Determination For Whitewater Rivers in West Virginia." National Wilderness Research Conference, Fort Collins July 23-26 1985. 471-473.

Driver, B., Brown, P. Stankey, G., Gregorie, T., "The ROS Planning System: Evolution, Basic Concepts, and Research Needed." Leisure Sciences, 1987: Vol 9. 201-212.

Festinger, L., A Theory of Cognitive Dissonance. 1957. New York:Harper and Row.

Graefe, A., Vaske, J., Kuss, F., "Social Carrying Capacity: An Integration and Synthesis of Twenty Years of Research," Leisure Sciences, 1984: 6:4, 395-431.

Gramann, J., "Toward a Behavioral Theory of Crowding in Outdoor Recreation: An Evaluation and Synthesis Research,"Leisure Sciences, 1982: 5:2, 109-126.

Haas, G."User Preferences for Recreation Experience Opportunities and Physical Resource Attributes in Three Colorado Wilderness Areas." 1979: Ph.D dissertation. Colorado State University, Ft Collins, CO.

Heberlein, T., "Density, Crowding, and Satisfaction: Sociological Studies for Determining Carrying Capacities," In: Proceedings: River Recreation Management and Research Symposium. General Technical Report NC-28. USDA General Technical Report NC-28. 67-76.

Howell, D., Statistical Methods for Psychology, Boston: Duxbury Press, 1987.

Knopf, R., "Recreation Needs and Behavior in Natural Settings," Human Behavior and Environment, 1983: Vol. 6, 205-240.

Knopf, R., Lime, D., A Recreation Manager's Guide to Understanding River Use and Users. USDA Forest Service General Technical Report WO-38. February 1984.

Knopp, T., Ballman, G., Merriam, L., "Toward a More Direct Measure of River User Preferences." Journal of Leisure Research, 1979: 11:4 317-326.

Kurtz, K., "Methodology for Determining and Allocating Carrying Capacity in a Roaded Natural River Corridor," Report for Estes-Poudre Ranger District, June 1988:

Lewandowski. J., "Water focus shifts from Rights to Quality," The Coloradoan Fort Collins, Oct 28,1993 C2.

Lime, David W., "Some Future Challenges in River Recreation Planning and Management," 1 st International Congress on Trail and River Recreation, 1986 188-195.

Mak, K., Jensen, M., Hartman, T., "Management Response to Growing Pressures in Western Whitewater Rivers--the Art of the Possible," In Proceedings: River Recreation Management and Research Symposiums. USDA General Technical Report NC-28.102-109.

Manning, R., "Density and Crowding in Wilderness: Search and Research for Satisfaction," National Wilderness Research Conference, 1985: Fort Collins, Co. 440-447.

Manning, Robert E., Ciali, C., "Recreation Density and User Satisfaction: A Further Exploration of the Satisfaction Model," Journal of Leisure Research, 1980: 12:4, 329-345.

Roggenbuck, J.W. Borrie, W., Williams, D., "The Use and User Characteristics, Management Preferences, and Satisfaction of Boaters and Anglers on the Arkansas Headwaters Recreation Area (Colorado), "

Report to the BLM Canon City District Office, Sept. 1993.

Roggenbuck,J.W. Socio-Psychological Inputs Into Carrying Capacity Assessments for Float-Trip Use of Whitewater Rivers in Dinosaur National Monument. 1975: Unpublished doctoral dissertation. Logan, Utah: Utah State University.287pp.

Roggenbuck, J., Schreyer, R., "Relations between River Trip Motives and Perception of Crowding, Management Preference, and Experience Satisfaction," In Proceedings: River Recreation Management and Research Symposium, USDA General Technical Report NC-28 359-364.

Schreyer, R., "Social Dimensions of Carrying Capacity: An Overview,"Leisure Sciences, 1984: 6:4, 387-393.

Schreyer, R., Roggenbuck, J., "The Influence of Experience Expectations on Crowding Perceptions and Social-Psychological Carrying Capacities," Leisure Sciences, 1978:1:4, 373-394.

Schreyer, R., Nielson, M., Westwater and Desolation Canyons: Whitewater River Recreation Study, Institute for the Study of Outdoor Recreation and Tourism, Utah State University, 1978.

Shelby, B., Bregenzer, S., Johnson, R., "Displacement and Product Shift," Journal of Leisure Research. 1988: 6:4

Shelby, B., Heberlein, T., "A Conceptual Framework for Carrying Capacity Determination," Leisure Sciences, 1984: 6:4, 433-451.

Shelby, B., Heberlein, T., Carrying Capacity in Recreation Settings. Oregon State University Press 1986.

Shelby, B., Heberlein, T., Vaske, J., Alfano, G., "Expectations, Preferences, and Feeling Crowded in Recreation Activities," Leisure Sciences, 1983: 6:1, 1-14.

Shelby, B., Heberlein, T., Vaske, J., "Comparative Analysis of Crowding in Multiple Locations: Results of fifteen years of Research," Leisure

Sciences, 1989: 11:4, 269-292

Shelby, B., Nielson, J., "River Running in the Grand Canyon: How much and what kind of use," 1977. In Proceedings: River Recreation Management and Research Symposium. January 24-27, 1977.168-177. USDA Forest Service General Technical Report NC-28.

Stankey, G.H. 1973. Visitor Perception of Wilderness Recreation Carrying Capacity. USDA Forest Service,INT -142.

Stankey, G., McCool, S., "Carrying Capacity in Recreational Settings: Evolution, Appraisal, and Application," Leisure Science, 1984: 6:4, 453-473.

Stankey, G.H. Book Review of "Carrying Capacity in Recreation Settings," Journal of Leisure Research, 1988: 20:1 83.

Thomas, Jack Ward, "Concerning New Directions for the Forest Service," Statement before the Committee on Natural Resources, United States House of Representatives, Feb 1994.

USDA and USDI Salmon National Wild and Scenic River Management Plan and Environmental Analysis, Final, Mt Hood National Forest and Salem District Bureau of Land Management, March 1993.

USDA Cache La Poudre Wild and Scenic Management Plan, Final, Arapaho and Roosevelt National Forests, March 1990.

USDI Arkansas River Recreation Management Plan and Environmental Analysis,Final, Bureau of Land Management, November 1988.

USDI Colorado River Management Plan, Draft, National Park Service, November 1988.

USDI Federal Register, National Wild and Scenic Rivers System: Final Revised Guidelines for Eligibility, Classification, and Management of River Areas. September 7, 1982 p 39549.

Vaske, J.J., Donnelly, M., Shelby B., "Establishing

Management Standards: Selected Examples of the Normative Approach." Pending publication in Leisure Sciences, 1994.

Vaske, J.J., Graefe, A., Kuss, F., "Resolved Issues and Remaining Questions about Social Carrying Capacity." Leisure Sciences, 1984: 6:4 497-507.

Williams, Dan, ed. Off Road Vehicle, River and Winter Recreation. National Forest Recreation Management Correspondence Study Course, Colorado State University: 1987.

APPENDIX 2 LANDOWNER SURVEYS

CACHE LA POUDRE

PROPERTY OWNERS

SURVEY

JULY 1993

CACHE LA POUDRE RIVER - PROPERTY OWNERS SURVEY

1. Please indicate to what extent you find each of the situations to be a problem? (Circle the number that best describes how serious you feel EACH to be.)

	NOT A PROBLEM	SLIGHT PROBLEM	MODERATE PROBLEM	SERIOUS PROBLEM	DON'T KNOW
A. RESOURCE DAMAGE					
Loss of vegetation	1	2	3	4	5
Bank erosion	1	2	3	4	5
Trees & branches overhanging in river	1	2	3	4	5
Impacts from dispersed camping	1	2	3	4	5
B. SANITATION					
Littering	1	2	3	4	5
Inadequate toilet facilities	1	2	3	4	5
C. DISTURBANCE					
Noise	1	2	3	4	5
Trespassing by river users	1	2	3	4	5
People being inconsiderate	1	2	3	4	5
Large groups of people on river	1	2	3	4	5
Unskilled people using river	1	2	3	4	5
D. LAW ENFORCEMENT					
Damage/loss of personal property	1	2	3	4	5
Level of law enforcement	1	2	3	4	5
People drinking alcoholic beverages	1	2	3	4	5
Too few rules and regulations	1	2	3	4	5
E. INFORMATION					
Inadequate information (signs, displays) at access points	1	2	3	4	5
Inadequate information (signs, displays) at Arrowhead and Ranger District Office	1	2	3	4	5
F. Other: _____					
_____	1	2	3	4	5
_____					
_____	1	2	3	4	5

If you rated any of these as serious problems, please explain:

_____

_____

2. For the river stretch on which you own property, do you feel there are conflicts between river users and property owners?

___ NO
___ YES –> If yes, with which types of users are conflicts occurring? What types of conflicts?

_____

_____

When are the conflicts likely to occur (season, month)?

_____

_____

3. Do you feel that more controls are needed to reduce these conflicts?

___ NO
___ YES –> If yes, what kinds of controls would you suggest?

_____

_____

4. Do you feel problems occurring on private land can be reduced by management practices by the Forest Service on the river?

___ NO
___ YES –> If yes, please explain:

_____

_____

5. For the river stretch you live on, do you feel the river environment is being damaged by recreational use?

___ NO
___ YES –> If yes, what types of environmental damage are occurring?

_____

_____

6. Do you feel more controls are needed to prevent the river environment from being damaged by recreational use?

___ NO
___ YES –> What type of controls would you suggest?

_____

_____

7. Please check the boxes that indicate how you are presently using the river and your river front property (check all that apply).

___ Residence (part time)
___ Residence (permanent)
___ Fishing ___ on shore ___ from a boat ___ wading in river
___ Boating on the Poudre

Type of craft: ___ Kayak (hard shelled) ___ Raft
___ Kayak (soft shelled) ___ Canoe
___ Other: _____

___ Hiking
___ Hunting
___ Scenic Viewing
___ To "get away from it all"
___ Picnicking
___ Household water supply
___ Irrigation of lawns
___ Entertaining
___ Biking
___ Other --> please specify: _____

THIS SPACE IS FOR GENERAL COMMENTS ON ANY OF THE TOPICS COVERED IN THE SURVEY:

THANK YOU FOR YOUR ASSISTANCE

If you would like a copy of the results, please write your name and address here:

CACHE LA POUDRE PROPERTY OWNERS SURVEY RESULTS

Demographics:

n=16

87.5% Permanent residents
12.5% Part time residents

Uses of Poudre:

12.5% Rafting
44% Fishing
69% Hiking
69% Scenic viewing
50% To "get away from it all"
25% Picnicking

Rated as moderate to serious problem:

A. Resource Damage

31% Loss of vegetation
50% Bank erosion (from cows also)
19% Trees & branches overhanging in river
37.5% Impacts from dispersed camping

B. Sanitation

50% Littering
50% Inadequate toilet facilities

C. Disturbance

31% Noise
31% Trespassing by river users (boaters, angers, campers)
37.5% People being inconsiderate
37.5% Large groups of people on river
44% Unskilled people using river

D. Law Enforcement

19% Damage/loss of personal property
25% Level of law enforcement
37.5% People drinking alcoholic beverages
37.5% Too few rules and regulations

E. Information

31% Inadequate information at access points
12.5% Inadequate information at Arrowhead & Ranger District Ofc

F. Other

6% Camping on private land, building campfires
25% People crossing road/congested areas at rafting accesses
25% Parking

37.5% Felt there are **conflicts** between river users and property owners
- loss of privacy; noise - scares wildlife; fishing vs. rafting; trespassing - anglers, kayakers
- conflicts occur in the summer; on weekend afternoons in the summer

31% Felt that **more controls** are needed to reduce these conflicts
- lower number of users; limit rafting permits; post reminders to respect private property; put trash cans at launch sites; rafting companies need to be more responsible; enforce present rules

25% Felt that problems occurring on private land can be reduced by **management practices** by the Forest Service on the river
- posted rules for river users (when on private land); lower number of users; open free parking areas off the highway instead of bordering private land

19% Felt the **river environment** is being damaged by recreational use
- over use; littering; defecation into river; noise; increased traffic hazard; bank erosion, plant loss

44% Felt **more controls** are needed to prevent the river environment from being damaged by recreational use
- register and pay a river use fee (rafters, kayakers); rafting permit limitation; reduce traffic; more restrooms

Additional comments:
- -people trespass even when posted
- -people urinating everywhere
- -safety issues due to traffic (loading/unloading areas)
- -buses/vehicles pulling out on blind corners
- -rafting companies act as if they own the canyon
- -rafters/kayakers wave and are respectful

APPENDIX 3 CACHE LA POUDRE PUBLIC COLLABORATION

Arapaho & Roosevelt National Forests
Estes Poudre Ranger District
1311 S. College
Ft. Collins, CO 80526

CACHE LA POUDRE RIVER MANAGEMENT PLAN PUBLIC RESPONSE

Responding to: _____

_____

Comments: _____

_____

_____

_____

_____

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_____

_____

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_____

_____

_____

OPTIONAL

Name: _____ Date: _____

Street: _____ Time: _____

City: _____ Zip: _____

Phone: _____

Thank you for your input.....

CACHE LA POUDRE PUBLIC MEETING AGENDA

JANUARY 25, LORY STUDENT CENTER ROMM 164a CSU
JANUARY 27, POUDRE PARK COMMUNITY CENTER

TIME	WHO	TOPIC
7:00	Mike Lloyd	Introduction; Why are we here? To update you on CLP Wild and Scenic River Plan, inform you on activities we have undertaken to implement this plan, and have the public effectively participate in collaborative decision making. Through your involvement, we want to have a partnership to support the management of the CLP river in a manner that sustains natural resources and that will, in turn contribute to the economic and community stability of the northern front range. 1. Wild and Scenic Plan review: vision, goals and implementation 2. Monitoring program in action -> CSU study with Vaske 3. Forum for understanding and cooperation; Your input!
7:15	Martha Moran Ginny Deal	**Visions** of the Cache La Poudre River Corridor Plan completed March 1990 (75 miles 45 rec 30 wild) Protect the outstanding scenic features and provide high quality recreation opportunities **(pg 8)** Increase in campground sites, 50% increase Eliminate dispersed camping Interpretation, Arrowhead Safer parking, Partnerships **Goals:** Maintain a balance of uses while reducing conflicts between users, **pg 11.** Key issues in plan: **camping, river access, private land, and commercial rafting** **Camping**, pg **12-13** eliminate dispersed camping, expand existing campgrounds, construct new campgrounds at Dutch George, Jack's Gulch, barrier free, RV designs, group camp areas, eliminate small non fee areas to picnic areas. River access points and safe parking for day users. Met with CDOT and any improvement must meet today's standards. **Commercial Rafting** (one of the most controversial issues in developing plan and still is) **pg 15** Special Use permit, limit to current rafting outfitters, limit group size, daily limits, launch times, advertise 50 customer days for guided kayaking, and monitor use! May authorize additional temp use if capacity is available within the limits. 1993 CSU study is a forum for understanding by partnering up with CSU and research to increase public

		understanding of ways to effectively participate in a collaborative decision process, Pvt. landowners study.
7:30	Jerry Vaske	Results of river monitoring study.
7:45	Martha Moran	Landowners survey.
7:50	Audience	Questions?? (concerning studies)
8:00	Martha	How are we implementing the vision and goal of the CLP river plan?

Balances	Reduce Conflicts?
River runners	Launch times, group size, daily limits, quiet zone through PP, improve access, commercials stop launching trips after 3:20 pm, Above Narrows more solitude even on weekends, River education workshop this spring. River ranger patrol to monitor commercial use.
Anglers	
Landowners	
Campers	More developed campsites and campgrounds, reduce impacts,

8:15	Pete Jobson	Dutch George proposal
8:25	Mike Lloyd	Comments and comment sheets distributed.
8:30	Inquiries and Adjourn!!	

Wild & Scenic Plan Public Meetings (1/25/94 & 1/27/94)
Questions From Audience

Lory Student Center - Fort Collins (1/25/94)

1. How has the plan changed in terms of rating (outfitters, usage, etc.)?
2. Making a public good into a private commodity is a concern.
3. Are outfitters able to sell their commercial days?
4. You would have more anglers and noncommercial boaters if there were less commercial boaters.
5. What is the impact on landowners?
6. What about anglers?
7. What about analyzing survey data like this (3 different groups): commercial rafters, noncommercial rafters, kayakers? There should be a large difference then?
   Note: Jerry did and there was no difference
8. What about displacement issue? If people were on the river to answer the questionnaire, they are already agreeing to deal with some crowding. But what about all of the people who aren't on the river to answer survey?
9. So the data is biased to first time users?
10. What about non-users (non river runners) and their opinions?
11. Will a follow up study be done or any future studies?
12. Very concerned with Dutch George proposal making access to Little South Fork of CLP Wilderness more readily available.
13. What about the bridge across the river - how much, what kind?
14. What about the impacts to the South Fork?
15. How do you decide how many sites in the whole canyon?
16. What are your plans for the present campgrounds?
17. It feels like we don't have a choice - it is Dutch George proposal or not. Maybe we could be provided with 2 or 3 options and then choose. I am against the expansion across the river.
18. Will displaced campers (who used to do dispersed camping) really go away from the river up to Jack's Gulch?
19. Need to do partnering with private landowners to open a KOA.
20. How much could the government regulate private boaters?
21. I am uncomfortable with the possibility of growing to 50,000 commercial boaters on the river.
22. What about having commercial river running only 6 days? Maybe having a "blue law" day where commercials cannot run.
23. Commercial and noncommercial boaters will always have a conflict.
24. We need limits ... the commercial limit is too high; I favor a permit system for all.
25. River has room for expansion; access points and canyon traffic are big problems; education is needed.
26. You could limit the access points.
27. As a private boater - I am against a permit system.
28. I have always felt more crowded with a permit system.
29. Limit amount of dogs in campgrounds.
30. What is price of canyon expansions and improvements?
31. Why charge more in Forest Service campgrounds just because private campgrounds say to?
32. I think the Forest Service is doing a good job.
33. Why can't you open campgrounds before Memorial Day? Maybe open some larger spur sites sooner.

34. How many wheelchair sites in the canyon?
35. What about limiting the launches of noncommercial boaters?

Poudre Park Community Center - Poudre Park (1/27/94)

1. Keep rafters off of the road - outfitters should remember to warn them.
2. At information center at bottom of canyon - have separate boards with information/etiquette for each recreation group (camping, hiking, rafting, angling, etc.).
3. Rafters are too loud - the Bighorn Sheep go up higher because of noise.
4. Elimination of dispersed camping - is that along the river corridor only? or everywhere? I would not camp in a campground myself, I would want to camp with my dog in a non-designated area.
5. Is land available along the river where you could make bigger parking for buses?
6. Does river recreation use change/go other places when water fluctuates?
7. When you talk about a quiet zone in Poudre Park, that is good, but waving is O.K., it shows the rafters are being friendly.
8. I have a house by the rapids and their little screams and waves are O.K.
9. I don't like when the rafters go by and bark at our dogs because it gets all the dogs going and creates a lot of noise.
10. Maybe the guides could say "watch out for the killer dogs."
11. Would the quarry be revegetated if Dutch George went in?
12. Is there any concern about the impacts to the Wilderness area?
13. I think Dutch George is a good idea and it is in good hands.
14. The Dutch George proposal does appear to be an ideal spot in the canyon.
15. A lot of good plans for campers, kayakers, rafters, but are there any plans for anglers? Mainly parking improvements? Above the ponds there are a lot of anglers, but no parking.
16. Young's Gulch used to be a beautiful place to hike, but now there is so much trash, signs of camping, anglers' trash, etc. If people would just take out their trash! What could we do to change this? Maybe education would help; most people who live in the canyon pick up stuff when they see it.
17. Will there be hosts in the new campgrounds? Just their presence makes a difference.
18. We do have some of the cleanest trout in our river.
19. Has the dump station in Narrows Campground been completely closed off? Can it be used again?
20. Robert Breckenridge (Wildwater): We try to be respectful to property owners, and if there is a problem with my company please call me and let me know. And the fast drive in Poudre Park: my drivers are instructed no faster than 5 mph and no dust. We try not to wave or talk to anglers. Sometimes we stop at Columbine to regroup to get ready for Pineview; people are instructed not to get out of boats; if they do get out, they try to step on Glenny's property (has been O.K.'d). If there are any concerns please call us directly. Also, we are very close to our maximum, so our numbers won't be getting much worse than it is now.
21. Sometimes bus drivers (rafting companies) pull off and don't use turn signals; some did not have trailer lights and had other hazards; maybe need to look at these more carefully.
22. Rapid Transit was the one who camped at the end of the canyon, pulled out into traffic and caused a hazard, and had no trailer lights.
23. Anything we can do to stop the inner tubes? Any laws to make them stop?

24. Maybe we could write a letter to the Sheriff's Dept. with a bunch of signatures about our concerns regarding tubing.
25. We feel a sense of protectorship of the river - we feel like its "our" river.
26. One of the worst hazards was private kayakers because they drive along really close to the shoulder scoping out the river on their way up.
27. There is a huge parking problem at Hewlett's Gulch - are they going to do anything?
28. Another problem was a kid (commercial rafter lying his towel on the asphalt and sunning on it to warm up (right in the highway!).
29. We asked Redfeather for no parking signs, for the fire house, 4 years ago and still haven't seen any.
30. Hewlett's Gulch - what about a parking lot over the bridge and over the hill like the one talked about 10 years ago.
31. There are no parking signs by the bridge (HG), but people don't pay attention.
32. How does a place like HG get so popular? Since when do mt. biker's rights take over property owner's rights?
33. Maybe the impacts to the area need to be studied? I thought that maybe Redfeather had looked into this.
34. Still a problem - the monkeys (rock climbers) hanging over the road.
35. For the amount of people up here, things are pretty good.
36. What happens when there are fires up places like Hewlett's Gulch?
37. One of the worse places for building fires is up Crown Point Road.
38. Will day use still be O.K. along the river?
39. If do a Hewlett Gulch study: need a helicopter pad up there.
40. What about a head tax (per commercial boater) designated for improvements?
41. Need a guard booth at cattle guard (at mouth of canyon) to control alcohol, firearms, etc.
42. How much more can the canyon handle?
43. Any plans to extend camping season once the campgrounds get rehabilitated?
44. If campgrounds are improved, is there a plan to handle the increased traffic and use?
45. Maybe you could post commercial outfitters launch times along the river, so people know when they can recreate without so many other people around.

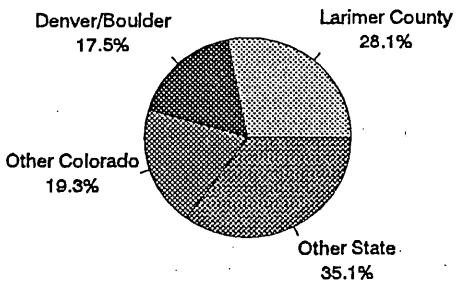
APPENDIX 4 CACHE LA POUDRE CAMPER SURVEY

United States Department of Agriculture | Forest Service | Arapaho and Roosevelt NFs Pawnee NG | Estes-Poudre Ranger District
148 Remington Street
Fort Collins, CO 80524
(303) 482-3822

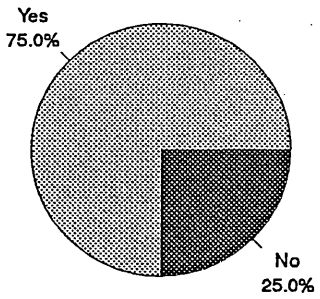
Introduction

A preliminary campground study was done in 1992 to assess what campers thought about our developed sites and to learn more about our customers needs and wants. This survey utilized the Southeastern Station's Outdoor Recreation and Assessment Groups short form Customer Survey. The survey was administered through personal interviews or by self administration to our recreationists at our four developed campgrounds. Our campground hosts assisted in adminstering this survey to our recreationists. This study was conducted at four sites along the Cache La Poudre River corridor from July 17 to August 28 1992. The results from this developed campground study conducted during the summer of 1992 are presented. 58 campers were contacted and the results from this initial study follows. For more information about this study please contact Martha Moran Outdoor Recreation Planner at the Estes-Poudre Ranger District.

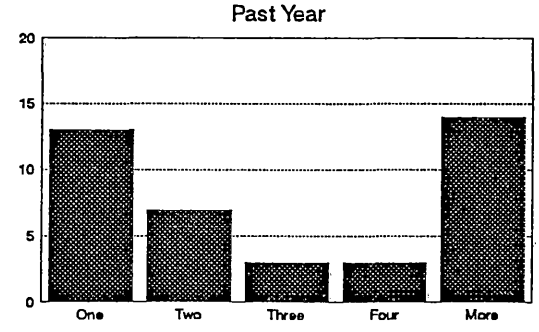
Where Do They All Come From?

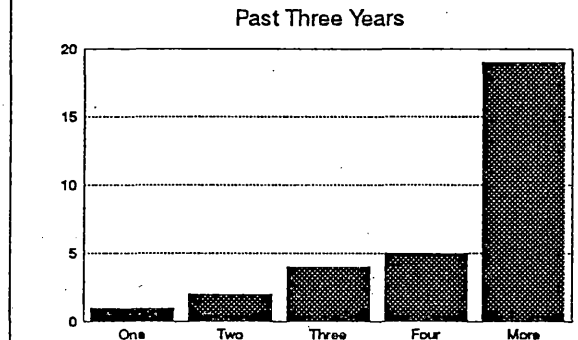


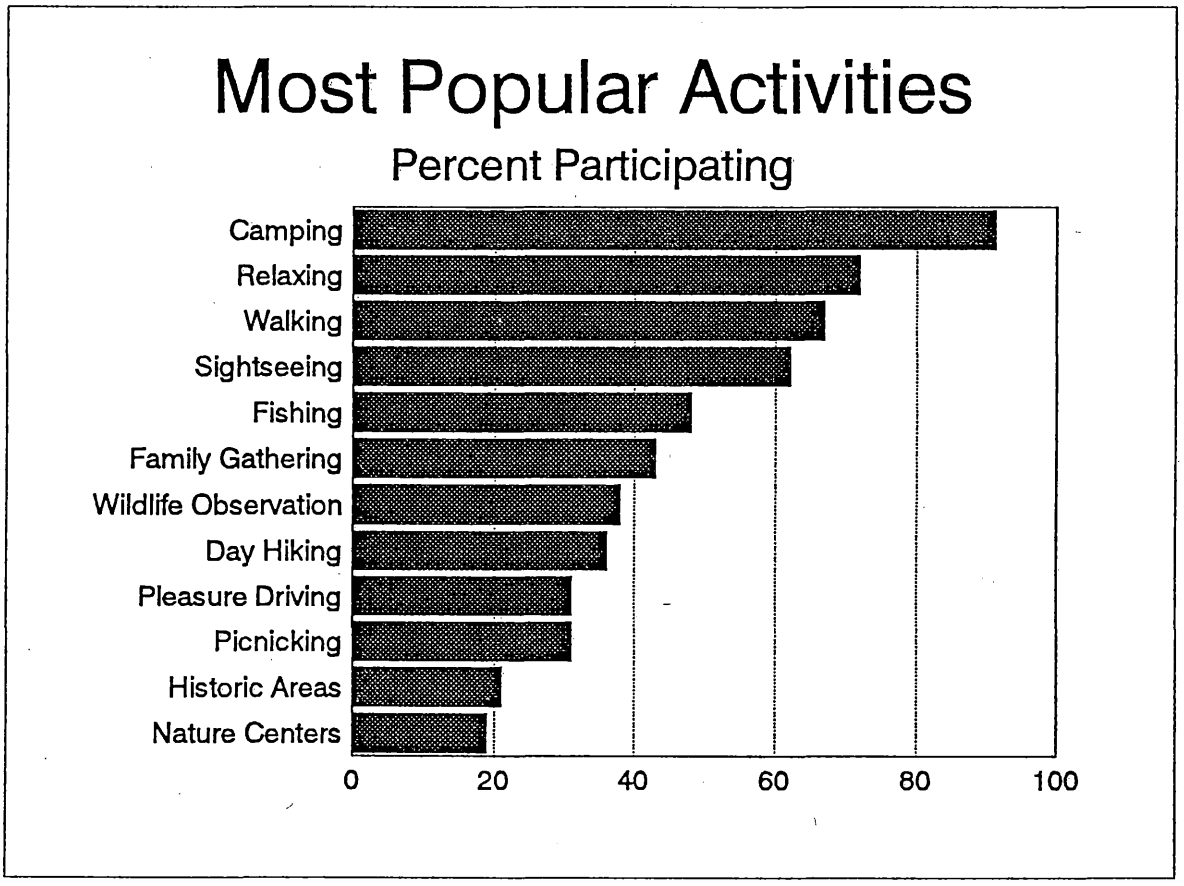
Have they been here before?



If Yes, how many times over the:

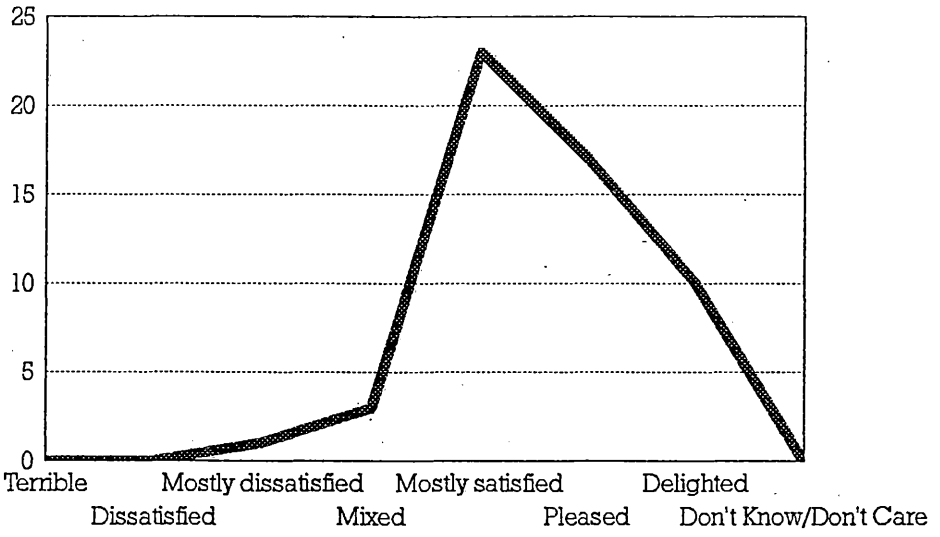





Most Popular Activities
Percent Participating
Camping
Relaxing
Walking
Sightseeing
Fishing
Family Gathering
Wildlife Observation
Day Hiking
Pleasure Driving
Picnicking
Historic Areas
Nature Centers
0
20
40
60
80
100

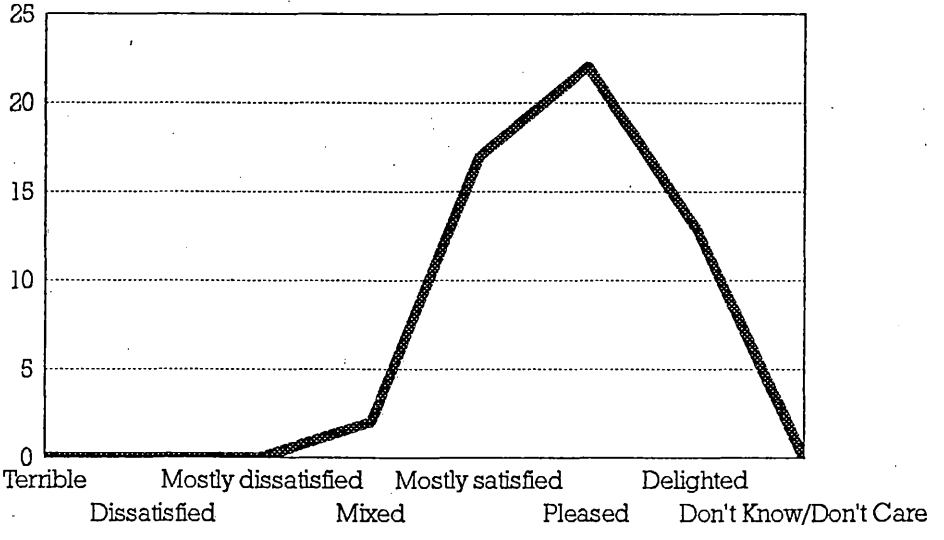
How do you feel about the

Overall quality of the recreation services



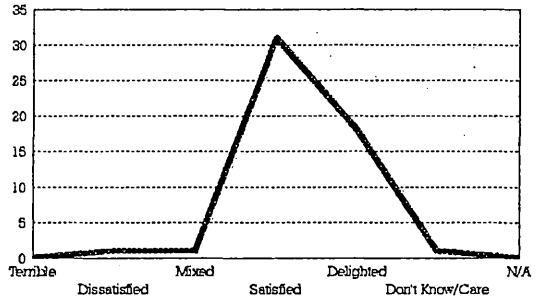
How do you feel about the

Overall recreation experience



Were you satisfied with the quality of the

Cleanliness of the restrooms



Were you satisfied with the quality of the

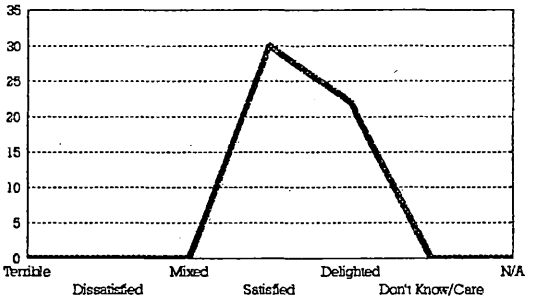
Cleanliness of the facilities and grounds

Were you satisfied with the quality of the

Basic information available

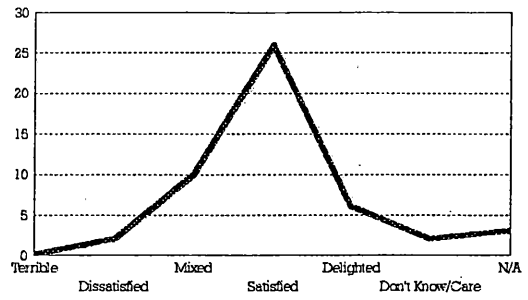
Were you satisfied with the quality of the

Helpfulness of agency employees



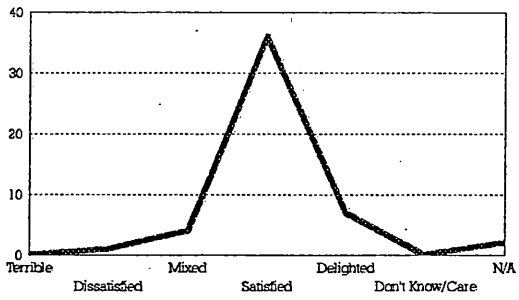
Were you satisfied with the quality of the

Availability of interpretive information



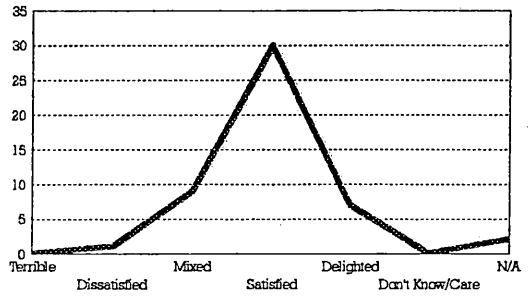
Were you satisfied with the quality of the

Safety and Security



Were you satisfied with the

Compatability of other recreationists' activities with my own



Were you satisfied with the

Repair and Condition of the facilities

Were you satisfied with the

Suitability of the facilities for my main activity

Were you satisfied with the

Level of crowding

Were you satisfied with the

Condition of natural features

Comments from Roosevelt National Forest
Estes/Poudre Ranger District Customer Survey Summer 1992

* The condition of our campsite was very poor. Site 26 is a drainage for this whole portion of the campground. Future upgrades should provide flat parking so that any kind of vehicle can use the site. Also, direct drainage away from campsites (or between them). Place tables and grates farther away from the road and provide pads for tent placements.

* Would like to have a dump station at entrance for deposting? campers. Would like all spaces to handle trailers - motorhomes, tents, and all camping types. Would like the leash law enforced on dogs.

* We like the evening programs. Might be nice to have electricity in 2 or 3 main locations to blow up mattresses with hair dryer but don't mind using our foot pump so electricity is bottom on the list for improvements. Would have appreciated having a covered picnic table and/or gravel tent pad or just 4 poles to tie cover and hang lights, laundry, etc.. to keep ropes off trees.

* Yellowjackets (wasps or bees) were BAD NEWS. A real problem at site 20. Kids got stung - wife got stung- dog got stung... I may get stung! The only negative experience we've had here. A really nice campground but I would learn more about dealing with yellowjacket before I would come back. We DO plan to come back. Bathrooms were CLEAN. Thats important to us. Hosts very friendly and helpful. I don't feel much about electrical hookups one way or another. Presently we camp out of tents with coleman stoves and lanterns. I would hate to see a nice camp ground like this one turned into an RV park. As far as improvements go, I wuld rather see money spent on more restrooms, water faucets (especially for waterless campgrounds) and leveling of camping places. In my opinion upgrading of primitive (waterless and bathroomless) campgrounds should be given priority over installation of electrical outlets at developed campgrounds.

* We have been camping at this campsite for over 40 years. We hope that you will not expand this site but keep it as it is in its natural state. As it is situated in a natural setting with the campsites not to close together. New restrooms have been great and the area has not changed over the years. You have done a great job here. (Sleepy Elephant)

* Kelly Flats is our favorite campground in the Roosevelt Forest. It is always clean, including the restrooms. The campground host is extremely courteous and helpful. He is one of the reasons we come here. Poudre Canyon needs a dump station at the Narrows. (Kelly Flats)

* Have an area or dumping ground to empty an RV or trailer toilets upon leaving campsite. (Kelly Flats)

* Please make parking closer to table area. Improve the drinking water. Longer staying time to 14 days. Dump station. Enjoyed campfire programs (Mtn park and Arrowhead). Host is courteous and helpful. (Kelly Flats)

* Need a dump station. Host is great. (Kelly Flats)

* Need of dump station. (Kelly Flats)

* We enjoy the spacious camp sites, the privacy and the trails off the campground. We feek that a lot of natural rock structures and environment would be destroyed if this particular campground would be expanded. Why did the dump station at the Narrows close? Could not a pay station be installed with an automatic pay gate? We have always paid when it was a pay area? Why did the Forest Service stop campstamps? These were very convenient and also the Forest Service had their money up front? We feel the campground host does a great job of keeping the rest rooms clean and serviced. (Kelly Flats)

* Need dumpstation. (Kelly Flats)

* We would appreciate a more level site to set up a camper or RV. We enjoyed the site and the river setting. (Ansel Watrous)

* Unfortunately, camping facility located too close to highway, highway noise interferring with the sound of nature. (Ansel Watrous)

* We have a great time here, but we feel a few more campsites are needed! We feel that the hosts at Ansel Watrous are the best we have encountered since we have been coming up here. Great job. (Ansel Watrous)

* There should be tent spaces for TENTS ONLY. It's very discouraging when the only pull-thru which we need for our trailer is occupied by a tent. We really enjoyed the mountain goats, birds and the wild and scenic river. Why don't you have the names and locations of the river rafter business people on your bulletin boards. We kept seeing the rafters but didn't know how to get in on it. (Ansel Watrous)

* I think more campgrounds should be provided in the Poudre Canyon (mainly in the east half of the canyon). Ansel Watrous should have the RV campsites leveled. More parking areas along highway for boating and hiking. More rock around fire grates. (Ansel Watrous)

* Pads need to be leveled. Turn at end of park could be improved. Is a very tight turn for large units. We do not like the reservation system. It is unfair to retired people who travel and can't make reservations. We do alot of Forest Service camping and under the reservation system we see alot of empty spots through the week because they are reserved for the following weekend and people don't take them because they would have to move. (Ansel Watrous)

* This is my third year at Ansel Watrous and it is one of the most enjoyalbe places. The camp host means alot to our stay. Pete and Ruby Hodge were some of the best. Continue to impress upon the campers to help keep the campgounds clean. (Ansel Watrous)

* Level the parking spaces side to side. Front to back can be handled without blocking up. Water needs to have sediment filtered out. (Ansel Watrous)

* Fished for one day, did not catch any fish. (Ansel Watrous)

* We feel the F.S. provides most needs to tent campers including convienent restrooms and water taps. Campers with self contained RV's are less demanding of convenient facilities and pose little load upon them. However the FS completely ignores basic facilities of sewage pump and fresh water supply for these users! We feel strongly that such dump and water facilities must be provided somewhere in the mid/lower region of the canyon(s) and their use should be included in the basic fee, just as for tenters. (Mountain Park)

* Provide dump station (Mountain Park)

* Post a few more fishing regulations. Possibly add showerhouse. Not interested in electric sites or dump station, but possibly could use dump station, out of way, for other campers. (Mountain Park)

* We would like to have electricity in the rest rooms. Also, we would like to have a public telephone on the grounds. It would be a great improvement if they would improve the bridge and entrance to the campground. Make wider turns. (Mountain Park)

* No change, friendly people, fishing was alright. (Mountain Park)

* Do not modernize campsite any more than they are. Keep tables in better conditions. Electricity to pavillion and camp hosts but unnecessary to campsites. Dump station would make for unnecessary traffic. Camping here is for people who enjoy the quiet natural surroundings of the Rocky Mountains. Please don't make it a KOA! (Mountain Park)

* We would like to see a dump station available. Also a pay telephone on the premises. Also a play ground are with swings and such for families with children. Toilet seat covers is a dispenser in the bathrooms. We would like to see the reservation system abolished and first come first served being the rule and also we would prefer no electricity. A certain area of the park should be set aside for tenters. (Mountain Park)

* A RV dumping station. Electrical hookups are not needed for our well being. (Mountain Park).

* A dump station for RV's. Light hook ups are of no value to our group. (Mountain Park)

* This is a beautiful camping area. Have enjoyed such nice facilities. Hope to come back again. The campground is in need of a dump station. (Mountain Park)

* During your planned "reconstruction" of the area, the addition of a dump station would be a great asset to the area. During the rebuilt, the addition of more camp sites along the river would be great. It doesn't seem like the lower picnic area is used very often. This would be a great area to add some more camper spots. How about a reservation system similar to Colorado State Forest. It always seems hard to set a good spot during weekends/summer. A ban on dogs or some dog control to keep them on a leash and control barking. Make all the new spaces level and large enough for RV's and tents both. We are looking forward to the new Mountain Park. Bill Mael 482-7575 (Mountain Park)

* Keep campsites well spaced/screened. Mark water locations better. Keep campground basic, well spaced, no yard lights, no showers, no electricity, pools, etc - leave it to the KOA's to cater to the big RV's. Thanks for asking we have been staying at various National Forest campgrounds and enjoy the emphasis on nature - well spaced sites - don't make it an urban campground. Enjoyed the stay. Ben Withhart (Mountain Park)

* The natural screening between camp sites and distance apart gives one the feeling of seclusion and not being crowded. In general the USFS does a good job in this respect at all their campgrounds. Electrical hookups not necessary. Tent campers should have their own designated area. Camp sites could be made more level. Pull through campsites are Great! (Mountain Park)

* Some of the parking areas could be alot more level. Would be alot more convenient if federal campgrounds had at least some dump stations. There are no dump stations on federal campgrounds from Cameron Pass to Ft Collins. (Mtn Park)

* An improvement would be a dump station put in and available. The grounds were well kept and the whole time it was very peaceful. There were no parties or rowdy people in the campground. I feel this is a great asset. (Mtn Park)

* It would be nice to have a place to empty RV's. (Mountain Park)

* I was dissapointed there were no Sat night programs for the kids. I heard you might put in electrical sites at Mtn Park. I would definately be against it. It would for many reasons lead to less of a quiet escape feeling. (Mtn park)

* We feel that putting electricity in some of the camp spots would detract from the natural beauty of the area and wholly unnecessary. (Mtn Park)

* We do not want to have electricity available at these campsites. It will attract large motor homes etc... We like the natural National Forest atmosphere with many campers using tents. This campground is often full already, we don't need to attract more RV's by putting in electrical facilities. One modern bathroom with a shower would be nice for longer stays (Mountain Park.

* This was our first visit to this part of Colorado and were happy to find that it is more like the Colorado we remember from years ago. We alway enjoy talks from the specialists. We pull a travel trailer accordingly were are always interested in dump stations, at least for grey water. What are the possiblities of a dump station. How about availablity of telephone service in campgrounds with more that 25 sites? (Mtn Park)

* Need: level campsites, dump station, available telephone.
Enjoyed: Poudre River, scenery, rustic feeling in our campsite, hummingbirds, chipmunks, the quietness. (Mtn Park)

* I still believe that the native Coloradoans who have paid taxes here for their lifetimes should have certain undeveloped areas like Kelly Flats for their undeveloped camping pleasure. We hated it when the road got paved because we knew the traffic and use would become too great. Can't stop progress, Can't stop traffic, can't stop pollution but we can educate and we

can hire more youth core people for sanitation purposes. We are preserving the wildlife, lets preserve the "old timers" way of camping too while also preserving the canyon. Backpackers should be ticketed for not having trash with them on the way back to the trailhead. (Mtn Park)

* We do have need of a dump station. (Mtn Park)

* Handicap campsites for the disabled. Campsites be made available on first come first served or reserved. Not like some saving an adjacent sites for friends, and at times never used. Just to keep others from being near them. Possibly having a dump station that can be supervised and not abused as in other locations. (Mtn Park)

* No dump sites or fresh water available. A wider bridge. The rangers presentation was great. Need more of this. (Mtn Park)

* Could add dumpstation for RV's. Forget the electric outlets, water hookups. More level sites and wider and longer. Very nice area. (Mtn Park)

* We came on Sun evening after a busy crowded weekend and found things clean and well cared for - appreciated that. We recently retired and moved to Ft Collins from Ohio. We will visit the Poudre Canyon often. (Mtn Park)

* The one great improvement would be a dump station. Also a public telephone. (Mountain Park)

APPENDIX 5 CACHE LA POUDRE WATER QUALITY DATA AND STANDARDS

06752000 CACHE LA POUDRE RIVER AT MOUTH OF CANYON, NEAR FORT COLLINS, CO--Continued
(National Water-Quality Assessment Program station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April through September, 1993

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
APR										
06...	1500	45	291	8.3	7.5	9.8	130	36	9.4	11
MAY										
04...	1100	158	160	8.1	13.5	9.3	66	19	4.6	6.9
JUN										
10...	1245	723	53	7.8	12.0	10.8	21	6.1	1.4	2.5
18...	1405	2790	40	7.7	8.5	10.4	14	4.0	0.9	1.6
JUL										
08...	1250	852	37	7.8	13.0	9.5	15	4.4	0.9	1.5
AUG										
11...	1445	564	35	7.6	18.0	8.3	14	4.3	0.9	1.7
30...	1735	257	39	7.4	15.0	8.9	15	4.5	1.0	1.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY[A] MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
APR										
06...	1.5	130	11	7.8	0.7	7.3	162	<0.01	<0.05	0.01
MAY										
04...	1.2	65	8.1	4.1	0.5	11	114	<0.01	<0.05	0.01
JUN										
10...	0.7	22	3.0	0.8	0.2	9.7	38	<0.01	<0.05	0.03
18...	0.6	15	2.2	0.6	0.2	7.2	39	<0.01	0.07	0.02
JUL										
08...	0.5	15	2.2	0.3	0.2	7.6	32	<0.01	<0.05	0.02
AUG										
11...	0.5	15	2.2	0.3	0.2	6.4	35	<0.01	<0.05	0.02
30...	0.9	16	2.5	<0.1	0.2	6.7	30	<0.01	0.05	0.02

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
APR									
06...	0.30	<0.20	0.02	0.01	<0.01	3	6	2.9	0.7
MAY									
04...	0.30	0.20	0.02	<0.01	<0.01	63	7	4.5	0.4
JUN									
10...	<0.20	<0.20	0.03	0.02	0.01	120	4	6.0	0.5
18...	0.40	0.20	0.05	0.02	<0.01	120	7	8.1	1.8
JUL									
08...	<0.20	<0.20	0.02	<0.01	<0.01	55	3	3.6	0.3
AUG									
11...	<0.20	<0.20	<0.01	<0.01	<0.01	35	2	1.8	0.3
30...	<0.20	0.30	0.01	0.01	0.01	31	2	2.2	0.3

A-Total alkalinity, determined in field by fixed end-point titration method on filtered sample

-Are the high values for April due to lower dilution because of low flows or does something else account for them.

- Monitoring - What would he look at.

06752000 CACHE LA POUDRE RIVER AT MOUTH OF CANYON, NEAR FORT COLLINS, CO--Continued
(National Water-Quality Assessment Program station)

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAY				
04...	1030	158	8	3.4
JUN				
10...	1215	723	8	16
18...	1530	2750	111	824
24...	1220	2120	31	177
JUL				
08...	1210	852	7	16
AUG				
11...	1535	564	6	9.1
30...	1750	257	2	1.4

STREAM CLASSIFICATIONS and WATER QUALITY STANDARDS

REGION: 2

BASIN: Cache La Poudre River

Stream Segment Description	CLASSIFICATIONS: HIGH QUAL CLASS 1	HIGH QUAL CLASS 2	REC. CLASS 1	REC. CLASS 2	AQUATIC LIFE CL. 1 COLD	AQUATIC LIFE CL. 1 WARM	AQUATIC LIFE CL. 2 COLD	AQUATIC LIFE CL. 2 WARM	WATER SUPPLY	AGRICULTURE	NUMERIC STANDARDS: PHYSICAL and BIOLOGICAL	INORGANIC mg/l	METALS mg/l		TEMPORARY MODIFICATION and QUALIFIERS
												EXISTING	QUALITY		
1. All tributaries to the Cache La Poudre River system, including all lakes and reservoirs, which are within Rocky Mountain National Park.	X														
2. Mainstem of the Cache La Poudre River from the boundary of Rocky Mountain National Park to the confluence with Joe Wright Creek.			X		X				X	X	D.O. = 6.0 mg/l 7.0 mg/l spawning pH = 6.5 - 9.0 Fecal Coliforms = 200 /100 ml	NH_3 = 0.02, unionized Residual Cl_2 = 0.003 Cyanide (free) = .005 S as H_2S = 0.002 undis Boron = 0.75 Nitrite (NO_2) = 0.05 Nitrate (NO_3) = 10.0 Chloride (Cl) = 250.0 Sulfate (SO_4) = 250.0	Arsenic (As) = 0.05 Cadmium (Cd) = 0.0004 Chromium (tri) = 0.05 Chromium (hex) = 0.025 Copper (Cu) = 0.005 Lead (Pb) = 0.004 Iron (Fe, sol) = 0.3 Manganese (Mn,sol)=.05	Mercury (Hg) = 0.00005 Nickel (Ni) = 0.05 Selenium (Se) = 0.01 Silver (Ag) = 0.0001 Zinc (Zn) = 0.1 Iron (Fe,tot) = 1.0 Manganese (Mn,tot)=1.0	
3. Mainstem of the Cache La Poudre River from the confluence with Joe Wright Creek to the Monroe Gravity Canal diversion.			X		X				X	X	D.O. = 6.0 mg/l 7.0 mg/l spawning pH = 6.5 - 9.0 Fecal Coliforms = 200 /100 ml	NH_3 = 0.02, unionized Residual Cl_2 = 0.003 Cyanide (free) = .005 S as H_2S = 0.002 undis Boron = 0.75 Nitrite (NO_2) = 0.05 Nitrate (NO_3) = 10.0 Chloride (Cl) = 250.0 Sulfate (SO_4) = 250.0	Arsenic (As) = 0.05 Cadmium (Cd) = 0.0004 Chromium (tri) = 0.05 Chromium (hex) = 0.025 Copper (Cu) = 0.007 Lead (Pb) = 0.004 Iron (Fe, sol) = 0.3 Manganese (Mn,sol)=.05	Mercury (Hg) = 0.00005 Nickel (Ni) = 0.05 Selenium (Se) = 0.01 Silver (Ag) = 0.0001 Zinc (Zn) = 0.1 Iron (Fe,tot) = 1.0 Manganese (Mn,tot)=1.0	
4. All tributaries to the Cache La Poudre River system, including all laked and reservoirs, from the boundary of Rocky Mountain National Park to a point immediately above the confluence with the North Fork of the Cache La Poudre River.			X		X		-		X	X	D.O. = 6.0 mg/l 7.0 mg/l spawning pH = 6.5 - 9.0 Fecal Coliforms = 200 /100 ml	NH_3 = 0.02, unionized Residual Cl_2 = 0.003 Cyanide (free) = .005 S as H_2S = 0.002 undis Boron = 0.75 Nitrite (NO_2) = 0.05 Nitrate (NO_3) = 10.0 Chloride (Cl) = 250.0 Sulfate (SO_4) = 250.0	Arsenic (As) = 0.05 Cadmium (Cd) = 0.0004 Chromium (tri) = 0.05 Chromium (hex) = 0.025 Copper (Cu) = 0.005 Lead (Pb) = 0.004 Iron (Fe, sol) = 0.3 Manganese (Mn,sol)=.05	Mercury (Hg) = 0.00005 Nickel (Ni) = 0.05 Selenium (Se) = 0.01 Silver (Ag) = 0.0001 Zinc (Zn) = 0.05 Iron (Fe,tot) = 1.0 Manganese (Mn,tot)=1.0	
6. Mainstem of the North Fork of the Cache La Poudre River, including all tributaries, lakes, and reservoirs, from the source to the inlet of Halligan Reservoir.			X		X				X	X	D.O. = 6.0 mg/l 7.0 mg/l spawning pH = 6.5 - 9.0 Fecal Coliforms = 200 /100 ml	NH_3 = 0.02, unionized Residual Cl_2 = 0.003 Cyanide (free) = .005 S as H_2S = 0.002 undis Boron = 0.75 Nitrite (NO_2) = 0.05 Nitrate (NO_3) = 10.0 Chloride (Cl) = 250.0 Sulfate (SO_4) = 250.0	Arsenic (As) = 0.05 Cadmium (Cd) = 0.0004 Chromium (tri) = 0.05 Chromium (hex) = 0.025 Copper (Cu) = 0.005 Lead (Pb) = 0.004 Iron (Fe, sol) = 0.3 Manganese (Mn,sol)=.05	Mercury (Hg) = 0.00005 Nickel (Ni) = 0.05 Selenium (Se) = 0.01 Silver (Ag) = 0.0001 Zinc (Zn) = 0.05 Iron (Fe,tot) = 1.0 Manganese (Mn,tot)=1.0	
7. Mainstem of the North Fork of the Cache La Poudre River from the inlet of Halligan Reservoir to the confluence with the Cache La Poudre River.				X			X		X	X	D.O. = 6.0 mg/l, 7.0 mg/l spawning pH = 6.5 - 9.0 Fecal Coliforms = 2000/100 ml	NH_3 = 0.02, unionized Residual Cl_2 = 0.003 Cyanide (free) = .005 S as H_2S = 0.002 undis Boron = 0.75 Nitrite (NO_2) = 0.05 Nitrate (NO_3) = 10.0 Chloride (Cl) = 250.0 Sulfate (SO_4) = 250.0	Arsenic (As) = 0.05 Cadmium (Cd) = 0.001 Chromium (tri) = 0.05 Chromium (hex) = 0.025 Copper (Cu) = 0.018 Lead (Pb) = 0.025 Iron (Fe,sol) = 0.3 Manganese (Mn,sol)=.05	Mercury (Hg) = 0.00005 Nickel (Ni) = 0.1 Selenium (Se) = 0.01 Silver (Ag) = 0.0001 Zinc (Zn) = 0.05 Iron (Fe,tot) = 1.0 Manganese (Mn,tot)=1.0	

OW VP 1 HighC 2 HighC II VP

REGION: 2 BASIN: Cache La Poudre River Stream Segment Description	Desig	Classifications	NUMERIC STANDARDS PHYSICAL and BIOLOGICAL	INORGANIC mg/l		METALS ug/l			TEMPORARY MODIFICATIONS AND QUALIFIERS
1. All tributaries to the Cache La Poudre River system, including all lakes and reservoirs, which are within Rocky Mountain National Park.	OW		NO	DEGRADATION			ALLOWED		
2. Mainstem of the Cache La Poudre River from the boundary of Rocky Mountain National Park to the confluence with Joe Wright Creek. All tributaries, lakes and reservoirs to the Cache La Poudre River which are within the Rawah, Neota, Comanche Peak and Cache La Poudre Wilderness areas or have been designated as Wild River segments.		Aq Life Cold 1 Recreation 1 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=200/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	
3. Mainstem of the Cache La Poudre River from the confluence with Joe Wright Creek to the Monroe Gravity Canal diversion.		Aq Life Cold 1 Recreation 1 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=200/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	
4. All tributaries to the Cache La Poudre River system, including all lakes and reservoirs, from the boundary of Rocky Mountain National Park to a point immediately above the confluence with the North Fork of the Cache La Poudre River, except for specific listing in Segment 2.		Aq Life Cold 1 Recreation 1 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=200/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	
5. Deleted.									
6. Mainstem of the North Fork of the Cache La Poudre River, including all tributaries, lakes and reservoirs, from the source to the inlet of Halligan Reservoir.		Aq Life Cold 1 Recreation 1 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=200/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	
7. Mainstem of the North Fork of the Cache La Poudre River from the inlet of Halligan Reservoir to the confluence with the Cache La Poudre River.	UP	Aq Life Cold 2 Recreation 2 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=2000/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	Addt. Organics.
8. All tributaries to the North Fork of the Cache La Poudre River from the inlet of Halligan Reservoir to the confluence with the Cache La Poudre River, except for specific listings in Segment 9.	UP	Aq Life Cold 2 Recreation 2 Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=2000/100ml						
9. Mainstem of Rabbit Creek and Lone Pine Creek from the source to the confluence with the North Fork of the Cache La Poudre River.		Aq Life Cold 1 Recreation 1 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=200/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	
10. Mainstem of the Cache La Poudre River from the Monroe Gravity Canal diversion to Shields Street in Ft. Collins, Colorado.	UP	Aq Life Cold 2 Recreation 2 Water Supply Agriculture	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 F.Coli=2000/100ml	NH_3(ac)=TVS NH_3(ch)=0.02 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=0.05 NO_3=10 Cl=250 SO_4=250	As(ac)=50(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=300(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=50(dis) Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot)	Ni(ac/ch)=TVS Se(ch)=10(Trec) Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS	Addt. Organics.
11. Mainstem of the Cache La Poudre River from Shields Street in Ft. Collins, Co to a point immediately above the confluence with Box Elder Creek.	UP	Aq Life Warm 2 Recreation 2 Agriculture	D.O.=5.0 mg/l pH=6.5-9.0 F.Coli=2000/100ml	NH_3(ac)=TVS NH_3(ch)=0.10 Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO_2=2.7	As(ac/ch)=TVS Cd(ac/ch)=TVS CrIII(ac/ch)=TVS CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=1000(Trec) Hg(ch)=0.01(Tot) Ni(ac/ch)=TVS	Se(ac/ch)=TVS Ag(ac/ch)=TVS Zn(ac/ch)=TVS	Nitrite as a 30 day average.

SUMMARY OF HISTORICAL SAMPLING AT SPLT STORET SITES

Agency	Agency station id	USGS station id	No. of samp.	First sample date	Last sample date	Min. para-meters	Max. para-meters	Average para-meters	Station Name
113FORS2	FS0212004000002	391000105220001	9	760818	800604	2	13	8.3	SOUTH PLATTE R,GOOSE CREEK AT BRIDGE ON F.R.211
113FORS2	FS0212015000001	391921105012701	12	770601	800730	2	13	7.7	SOUTH PLATTE R,JACKSON CREEK AT SHAMBALLAH ASHRAMA
113FORS2	FS0212001000001	392500105500001	11	760817	800813	3	13	9.1	SOUTH PLATTE R,JEFFERSON CK ABV JEFFERSON BOUNDARY
113FORS2	FS0210057450402	403740105484001	93	760519	791005	1	7	3.2	SOUTH PLATTE R,JOE WRIGHT @ MOUTH CONFLUENCE WITH
113FORS2	FS0210057050308	403340105521001	6	770630	770725	2	5	4.3	SOUTH PLATTE R,JOE WRIGHT ABOVE SEDIMENT PONDS 74
113FORS2	FS0210057050307	403400105514001	6	770630	770725	3	5	4.5	SOUTH PLATTE R,JOE WRIGHT BELOW SEDIMENT PONDS 75
113FORS2	FS0210057050301	403550105511001	34	760518	791005	2	8	4.1	SOUTH PLATTE R,JOE WRIGHT CK ABV CHAMBERS LK 6
113FORS2	FS0210059040201	403430105350001	10	760505	760903	1	7	6.1	SOUTH PLATTE R,LITTLE S FK @ BENNETT CK CAMPGROUND
113FORS2	FS021005705030P	403220105531001	5	770630	770725	3	4	3.4	SOUTH PLATTE R,LOWER ZIMMERMAN LAKE STATION 78
113FORS2	FS021005705030J	403300105523001	2	770629	770715	3	3	3.0	SOUTH PLATTE R,MIDDLE RSVR STATION @ USGS STATION
113FORS2	FS0210057050305	403430105513001	93	770629	791005	2	5	4.1	SOUTH PLATTE R,N FK JOE WRIGHT CK LOWER STATION 7
113FORS2	FS0210057050306	403420105520001	5	770629	770725	3	4	3.8	SOUTH PLATTE R,N FK OF JOE WRIGHT CK UPPER STATION
113FORS2	FS0210061040301	404150105412001	14	760505	760902	1	8	6.1	SOUTH PLATTE R,POUDRE RIVER BELOW FISH HATCHERY 1
113FORS2	FS0210057050309	403320105520001	5	770629	770727	1	5	3.8	SOUTH PLATTE R,TRIB 1 JOE WRIGHT RSVR 73
113FORS2	FS021005705030Q	403720105532001	13	760602	770725	1	7	5.0	SOUTH PLATTE R,UPPER JOE WRIGHT CK @ CAMERON PASS
113FORS2	FS021005705030O	403210105524001	5	770630	770725	4	5	4.8	SOUTH PLATTE R,UPPER ZIMMERMAN LAKE STATION 77
113FORS2	FS0212015000002	391502104590401	12	770601	800730	2	12	7.9	SOUTH PLATTE RIVER,BEAR CREEK AT PERRY PARK
113FORS2	FS0210037020204	393730105374001	16	790606	791004	5	19	8.8	SOUTH PLATTE RIVER,CHICAGO CREEK ABOVE BURN I-4
113FORS2	FS0210057540201	403110105461001	9	760520	760923	5	8	7.1	SOUTH PLATTE RIVER,CORRAL CREEK 9
113FORS2	FS0212007000002	392600105463001	4	800422	800812	4	7	6.0	SOUTH PLATTE RIVER,HOOSIER CREEK
113FORS2	FS0212004000005	391645105310001	1	800717	800717	11	11	11.0	SOUTH PLATTE RIVER,INDIAN CREEK
113FORS2	FS0210057050304	403440105512001	87	780612	791005	2	5	4.2	SOUTH PLATTE RIVER,JOE WRIGHT @ BRIDGE 4
113FORS2	FS0210057050303	403440105513001	9	770615	770725	4	4	4.0	SOUTH PLATTE RIVER,JOE WRIGHT CREEK 68
113FORS2	FS021005705030R	403250105522001	32	790525	790907	2	3	2.1	SOUTH PLATTE RIVER,JOE WRIGHT CREEK STN 2DAM
113FORS2	FS0210059040401	403730105314001	15	760517	790731	5	9	7.6	SOUTH PLATTE RIVER,LITTLE BEAVER CREEK 4
113FORS2	FS0210037020701	394630105470001	9	790522	790928	6	8	7.3	SOUTH PLATTE RIVER,LOWER HOOP CREEK H-1
113FORS2	FS0210053040202	401850105244001	5	790613	790801	7	9	8.2	SOUTH PLATTE RIVER,LOWER LION GULCH L-1
113FORS2	FS0212004000007	391730105333001	1	800717	800717	11	11	11.0	SOUTH PLATTE RIVER,MONKEY CREEK

SUMMARY OF HISTORICAL SAMPLING AT SPLT STORET SITES

Agency	Agency station id	USGS station id	No. of samp.	First sample date	Last sample date	Min. para-meters	Max. para-meters	Average para-meters	Station Name
113FORS2	FS0212004000006	391715105324501	1	800717	800717	11	11	11.0	SOUTH PLATTE RIVER,NO NAME CREEK
113FORS2	FS0210037020201	393940105381001	17	790607	791005	7	18	9.2	SOUTH PLATTE RIVER,SOUTH FORK CHICAGO CREEK I-5
113FORS2	FS0212004000003	391700105303001	2	800617	800717	11	12	11.5	SOUTH PLATTE RIVER,SOUTH FORK OF LOST CREEK
113FORS2	FS0210061540101	404200105150001	15	760517	760903	1	7	5.7	SOUTH PLATTE RIVER,SOUTH FORK OF POUDRE'@ MOUTH 5
113FORS2	FS0210057050302	403540105505001	10	760518	760923	7	8	7.4	SOUTH PLATTE RIVER,TRAP CREEK 7
113FORS2	FS0210037020702	394730105465001	8	790627	790926	7	8	7.6	SOUTH PLATTE RIVER,UPPER HOOP CREEK H-2
113FORS2	FS0210053040201	401820105264001	5	790613	790803	7	8	7.8	SOUTH PLATTE RIVER,UPPER LION GULCH L-2
113FORS2	FS021005705030L	403240105530001	7	770630	770727	1	5	3.6	SOUTH PLATTE RIVER,UPPER MONTGOMERY CREEK 79
113FORS2	FS0212004000004	391715105302001	2	800617	800717	11	13	12.0	SOUTHPLATTE RIVER,NORTH FORK OF LOST CREEK
113FORS2	FS0212006000003	390340105110001	1	800715	800715	11	11	11.0	UPPER SOUTH PLATTE RIVER,PHANTOM CREEK
11BIOACC	3200	401030104590001	1	870824	870824	28	28	28.0	ST VRAIN RIVER NEAR LONGMONT
11EPALES	080102	395751105294801	3	750507	751010	1	1	1.0	BARKER RESERVOIR
11EPALES	080101	395756105290001	3	750507	751010	1	1	1.0	BARKER RESERVOIR
11EPALES	080201	395627104445301	3	750505	751010	1	1	1.0	BARR LAKE
11EPALES	080202	395627104454801	3	750505	751010	1	1	1.0	BARR LAKE
11EPALES	0811BA	400450104400001	12	741217	750922	7	9	7.3	BEEBE SEEP CANAL,HUDSON
11EPALES	0811A1	401420104381501	5	750418	750723	5	5	5.0	BELO MILTON RES DAM 10.6 MI SE LASALLE,GILMORE DIT
11EPALES	0804A2	393627104492001	6	750209	750621	5	5	5.0	BNK 100 FT E OF SEC RD 1.6 M N RT 88 JC,CHERRY CK
11EPALES	0802A1	395732104451701	10	741129	750801	4	6	5.0	BNK 20 FT NE OF RD GOING OVER DAM,SPEER CANAL
11EPALES	0802B1	395700104443001	8	741129	750721	5	6	5.1	BNK 300 FT S OF RD GOING OVER DAM,DENVER-HUDSON CA
11EPALES	0802A2	395535104465001	13	740928	750811	4	7	5.2	BNK 400 FT DWNSTRM FRM SEC RD,O'BRIAN CANAL
11EPALES	0801A1	395800105285401	4	750629	750819	5	5	5.0	BNK BLW DAM .95 MI SW OF TUNGSTEN,MIDDLE BOULDER C
11EPALES	080403	393812104505501	3	750507	751009	1	1	1.0	CHERRY CREEK LAKE
11EPALES	080402	393818104515701	3	750507	751009	1	6	2.7	CHERRY CREEK LAKE
11EPALES	080401	393858104511301	3	750507	751009	1	9	3.7	CHERRY CREEK LAKE
11EPALES	0801C1	395755105285001	13	740929	750819	4	7	5.2	CLVRT BELO S SPLWAY .4 MI SW OF TUNGSTE,GRAVETY CA
11EPALES	080601	393630106012201	2	750825	751009	1	1	1.0	DILLON RESERVOIR
11EPALES	0804A1	393911104512001	6	750518	750823	5	5	5.0	I225 BRDG .9 MI SW OF PARKER RD UNDERPA,CHERRY CK

SUMMARY OF HISTORICAL SAMPLING AT SPLT NWIS SITES (SURFACE WATER)

Station number	Hydrologic unit	County code	Number of samples	First sample date	Last sample date	Minimum parameters	Maximum parameters	Average parameters	Station Name
06732000	10190006	069	16	680412	701016	3	3	3.0	GLACIER CREEK NEAR ESTES PARK, CO.
06732300	10190006	069	19	680412	701016	3	3	3.0	BEAVER BROOK NEAR ESTES PARK, CO.
06732500	10190006	069	1	751018	751018	17	17	17.0	FALL RIVER AT ESTES PARK, CO.
06733000	10190006	069	164	521004	830915	1	18	3.7	BIG THOMPSON RIVER AT ESTES PARK, CO.
06734900	10190006	069	284	700902	920325	3	48	25.7	OLYMPUS TUNNEL AT LAKE ESTES, CO.
06735500	10190006	069	87	720509	830915	1	35	2.6	BIG THOMPSON RIVER NEAR ESTES PARK, CO.
06736700	10190006	069	115	700902	800917	5	34	12.8	BIG THOMPSON R ABOVE DILLE TUNNEL, NR DRAKE, CO.
06737500	10190007	069	1,267	690919	910924	3	93	10.1	HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO.
06738000	10190006	069	86	720510	840102	1	35	2.8	BIG THOMPSON R AT MOUTH OF CANYON, NR DRAKE, CO.
06739210	10190006	069	58	870501	920305	12	44	26.0	BIG THOMPSON R AB BUCKHORN C, NEAR LOVELAND, CO.
06741480	10190006	069	153	790628	920305	3	54	32.9	BIG THOMPSON RIVER ABOVE LOVELAND, CO.
06741510	10190006	069	155	790628	920305	9	56	33.1	BIG THOMPSON RIVER AT LOVELAND, CO.
06741520	10190006	069	152	790628	920305	10	56	33.4	BIG THOMPSON RIVER BELOW LOVELAND, CO.
06741530	10190006	069	58	870428	920306	12	43	26.1	BIG THOMPSON RIVER AT I-25, NEAR LOVELAND, CO.
06744000	10190006	123	213	500117	821005	1	52	23.4	BIG THOMPSON RIVER AT MOUTH, NEAR LA SALLE, CO.
06746095	10190007	069	121	781026	910829	2	5	4.2	JOE WRIGHT CREEK ABOVE JOE WRIGHT RESERVOIR, CO.
06746100	10190007	069	21	730831	781017	3	4	3.1	JOE WRIGHT CREEK NEAR CAMERON PASS, CO.
06746110	10190007	069	117	781017	910829	1	5	4.0	JOE WRIGHT CREEK BELOW JOE WRIGHT RESERVOIR, CO.
06747500	10190007	069	49	680913	750829	3	54	30.4	CACHE LA POUDRE RIVER NEAR RUSTIC, CO.
06748000	10190007	069	1	730424	730424	30	30	30.0	CACHE LA POUDRE RIVER NEAR LOG CABIN, CO.
06748200	10190007	069	25	680814	730606	3	3	3.0	FALL CREEK NEAR RUSTIC, CO.
06748500	10190007	069	1	680814	680814	3	3	3.0	SOUTH FORK CACHE LA POUDRE RIVER NR EGGERS, CO.
06748510	10190007	069	21	680815	730809	3	3	3.0	LITTLE BEAVER CREEK NEAR IDYLWILDE, CO.
06748530	10190007	069	40	680814	730810	3	19	3.4	LITTLE BEAVER CREEK NEAR RUSTIC, CO.
06748600	10190007	069	64	680814	790905	1	52	3.9	SOUTH FORK CACHE LA POUDRE RIVER NR RUSTIC, CO.
06749000	10190007	069	1	730425	730425	30	30	30.0	CACHE LA POUDRE RIVER BELOW ELKHORN CREEK, CO.
06749500	10190007	069	61	791024	840921	3	83	46.6	CACHE LA POUDRE RIVER NEAR FORT COLLINS, CO.
06751490	10190007	069	67	861016	920220	4	49	41.1	NORTH FORK CACHE LA POUDRE R. AT LIVERMORE, CO

SUMMARY OF HISTORICAL SAMPLING AT SPLT NWIS SITES (SURFACE WATER)

Station number	Hydrologic unit	County code	Number of samples	First sample date	Last sample date	Minimum para-meters	Maximum para-meters	Average para-meters	Station Name
06751500	10190007	069	1	730425	730425	42	42	42.0	N FORK CACHE LA POUDRE RIVER NEAR LIVERMORE, CO.
06752000	10190007	069	387	620914	830602	1	54	12.7	[redacted]
06752258	10190007	069	151	791025	920219	1	83	33.9	CACHE LA POUDRE R A SHIELDS ST A FT COLLINS, CO.
06752260	10190007	069	409	750427	920218	1	83	18.5	CACHE LA POUDRE RIVER AT FORT COLLINS, CO.
06752270	10190007	069	305	720522	920219	1	83	20.6	CACHE LA POUDRE RIVER BELOW FORT COLLINS, CO.
06752280	10190007	069	180	791024	920219	3	83	29.5	CACHE LA POUDRE R AB BOXELDER C, NR TIMNATH, CO.
06752300	10190007	069	116	780119	791227	1	38	8.8	CACHE LA POUDRE RIVER AT TIMNATH, CO.
06752500	10190007	123	229	500117	890928	1	50	25.2	CACHE LA POUDRE RIVER NEAR GREELEY, CO.
06754000	10190003	123	436	491014	911113	1	89	17.5	SOUTH PLATTE RIVER NEAR KERSEY, CO.
06755800	10190009	021	32	860522	910926	2	83	14.2	CROW CREEK AT ROUNDTOP ROAD, NR CHEYENNE, WY
06755950		021	65	830527	920122	3	83	20.2	CROW CR AT F.E. WARREN AFB, WYO
06756000	10190009	021	114	720728	910926	1	46	18.4	CROW CREEK NR CHEYENNE WYO
06756060	10190009	021	7	901101	920122	11	42	33.1	CROW CREEK NEAR ARCHER, WY
06756100	10190009	021	4	900829	910813	11	66	25.0	CROW CREEK NEAR CARPENTER, WY
06756995	10190003	123	188	761214	880915	3	34	15.5	SOUTH PLATTE RIVER AT MASTERS, CO.
06757600	10190010	041	53	560503	640818	3	3	3.0	KIOWA CREEK AT K-79 RES, NEAR EASTONVILLE, CO.
06758000	10190010	039	27	570731	650618	1	34	11.1	KIOWA CREEK AT ELBERT, CO.
06758100	10190010	039	18	630812	650803	3	23	10.7	WEST KIOWA CREEK AT ELBERT, CO.
06758200	10190010	039	70	600321	650804	3	35	11.6	KIOWA CREEK AT KIOWA, CO.
06758300	10190010	001	2	610413	610712	3	3	3.0	KIOWA CREEK AT BENNETT, CO.
06758500	10190003	087	395	521007	920226	3	89	22.8	SOUTH PLATTE RIVER NEAR WELDONA, CO.
06758700	10190011	039	1	750929	750929	32	32	32.0	MIDDLE BIJOU CREEK TRIBUTARY NR DEER TRAIL, CO.
06759100	10190011	087	149	760118	870924	1	33	12.2	BIJOU CREEK NEAR FT. MORGAN, CO.
06759500	10190012	087	1	831102	831102	4	4	4.0	SOUTH PLATTE RIVER AT FORT MORGAN, CO.
06760000	10190012	087	142	500118	800915	1	35	21.2	SOUTH PLATTE RIVER AT BALZAC, CO.
06760500	10190012	075	1	551007	551007	3	3	3.0	SOUTH PLATTE RIVER NEAR CROOK, CO.
06762500	10190016	105	1	770613	770613	8	8	8.0	LODGEPOLE CREEK AT BUSHNELL, NEBR.
06762550	10190016	105	97	730321	800915	3	56	28.0	LODGEPOLE CREEK AT KIMBALL NEBR

1993 Cache la Poudre Angler Survey

Colorado State University, in conjunction with the U.S.D.A. Forest Service is conducting this study in an effort to improve the quality of your Poudre River fishing experience.

1. About how many times have you fished the Poudre River? _____ times _____ This is my first time

2. Including today, about how many times have you fished the Poudre **in the last 12 months**? _____ times

3. How many fish did you catch today?
   _____ Total number of fish caught (including the fish you released)
   _____ Total number of fish kept

4. Do you generally fish with:
   _____ flies and/or artifical lures If flies/lures, do you generally use a _____ fly rod or _____ spin reel?
   _____ bait

5. Overall, how would you rate your fishing experience on the Poudre River today?
   _____ Poor _____ Good _____ Excellent
   _____ Fair _____ Very good _____ Perfect

6. Please estimate the number of each of the following types of recreationists you saw while fishing today? Do not count members of your own party.
   _____ Number of Rafts Seen _____ Number of Canoes Seen
   _____ Number of Kayaks Seen _____ Number of Other Anglers Seen

7. Did you have any conflicts with any of the following groups? (Check all that apply)
   _____ Rafters _____ Kayakers _____ Canoers _____ Anglers _____ Landowners _____ Other

8. Did you feel crowded by the number of ***rafts*** you saw while fishing today?

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded		Extremely Crowded	

9. What is an acceptable number of ***rafts*** to see while you are fishing on the river?

   It is OK to see as many as _____ rafts while fishing the river
   _____ It doesn't matter to me

10. While you were fishing, how close did the ***nearest raft*** come to you?
    _____ 0 to 5 feet _____ more than 15 feet
    _____ 6 to 10 feet _____ Did not see any rafts
    _____ 11 to 15 feet

11. What is the minimum distance you would tolerate between yourself and ***rafts*** while you are fishing?
    _____ 0 to 5 feet _____ more than 15 feet
    _____ 6 to 10 feet _____ Do not tolerate seeing rafts at any distance
    _____ 11 to 15 feet

12. Did you feel crowded by the number of ***kayaks*** you saw while fishing today?

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded		Extremely Crowded	

13. What is an acceptable number of ***kayaks*** to see while you are fishing on the river?

    It is OK to see as many as _____ kayaks while fishing the river
    _____ It doesn't matter to me

14. While you were fishing, how close did the ***nearest kayak*** come to you?
    _____ 0 to 5 feet _____ more than 15 feet
    _____ 6 to 10 feet _____ Did not see any kayaks
    _____ 11 to 15 feet

15. What is the minimum distance you would tolerate between yourself and ***kayaks*** while you are fishing?
    _____ 0 to 5 feet _____ more than 15 feet
    _____ 6 to 10 feet _____ Do not tolerate seeing kayaks at any distance
    _____ 11 to 15 feet

16. Did you feel crowded by the number of ***anglers*** you saw while fishing today?

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded		Extremely Crowded	

17. What is an acceptable number of ***anglers*** to see while you are fishing on the river?

    It is OK to see as many as _____ other anglers while fishing the river
    _____ It doesn't matter to me

18. While you were fishing, how close were the ***nearest anglers*** on either side of you?
    _____ Shoulder to shoulder _____ Casting range (30 feet)
    _____ 1 rod length (9 feet) _____ Beyond casting range (more than 30 feet)
    _____ 2 rod lengths (18 feet) _____ Completely out of view

19. What is the minimum distance you would tolerate between yourself and ***other anglers*** while you are fishing?
    _____ Shoulder to shoulder _____ Casting range (30 feet)
    _____ 1 rod length (9 feet) _____ Beyond casting range (more than 30 feet)
    _____ 2 rod lengths (18 feet) _____ Completely out of view

20. How many individuals were in your fishing party today? _____

21. What is your age? _____ Are you _____ Male _____ Female?

Thank You for Your Cooperation!

1993 Cache la Poudre River Survey

Colorado State University, in conjunction with the U.S.D.A. Forest Service is conducting this study in an effort to improve the quality of your Poudre River recreation experience.

1. About how many times have you floated the Poudre River? _____ times _____ This is my first visit

2. Including today, about how many times have you floated the Poudre **in the last 12 months**? _____ times

3. On this trip, did you go with a professional outfitter?
   _____ No _____ Yes If yes, which outfitter: _____

4. What type of craft were you in today? *(Check only one)*
   _____ Raft _____ Kayak _____ Canoe _____ Other, please specify: _____

5. What was your put-in location: _____ What was your take-out location: _____
   What was your put-in time: _____ What was your take-out time: _____

6. Overall, how would you rate your experience on the Poudre River today?
   _____ Poor _____ Good _____ Excellent
   _____ Fair _____ Very good _____ Perfect

7. How did each of the following affect your enjoyment of the river today?

	Increased My Enjoyment		No Effect on My Enjoyment		Reduced My Enjoyment
Access facilities	1	2	3	4	5
Availability of restrooms	1	2	3	4	5
Information from the guide	1	2	3	4	5
Water flows	1	2	3	4	5
The natural setting of the river	1	2	3	4	5
Visible signs of human impacts	1	2	3	4	5

8. Please estimate the number of each of the following types of boaters you saw at **each** location? Do not count members of your own party.

	Estimate Number of:		
Location	Rafters Seen	Kayakers Seen	Canoers Seen
At the access where you first put into the river	_____	_____	_____
While traveling on the river	_____	_____	_____
At the access where you took out of the river	_____	_____	_____

9. Did you have any conflicts with any of the following groups? (Check all that apply)
   _____ Rafters _____ Kayakers _____ Canoers _____ Anglers _____ Landowners _____ Other

10. Did you feel crowded by the number of ***rafters*** at each of the following locations?

Did you feel crowded by the **number of rafters:**	Not at all Crowded		Slightly Crowded		Moderately Crowded			Extremely Crowded	
at the put in location	1	2	3	4	5	6	7	8	9
while on the river	1	2	3	4	5	6	7	8	9
at the take out location	1	2	3	4	5	6	7	8	9

11. What is an acceptable number of other ***rafters*** to see while you are at the put in and take out locations?
    It is OK to have as many as _____ other rafters at the put in and take out locations
    _____ It doesn't matter to me

12. What is an acceptable number of other ***rafters*** to have within eyesight while you are floating the river?
    It is OK to have as many as _____ other rafters within eyesight while floating the river
    _____ It doesn't matter to me

13. Did you feel crowded by the number of ***kayakers*** at each of the following locations?

Did you feel crowded by the **number of kayakers:**	Not at all Crowded		Slightly Crowded		Moderately Crowded			Extremely Crowded	
at the put in location	1	2	3	4	5	6	7	8	9
while on the river	1	2	3	4	5	6	7	8	9
at the take out location	1	2	3	4	5	6	7	8	9

14. What is an acceptable number of other ***kayakers*** to see while you are at the put in and take out locations?
    It is OK to have as many as _____ other kayakers at the put in and take out locations
    _____ It doesn't matter to me

15. What is an acceptable number of other ***kayakers*** to have within eyesight while you are floating the river?
    It is OK to have as many as _____ other kayakers within eyesight while floating the river
    _____ It doesn't matter to me

16. How many individuals were in your party today? _____

17. What is your age? _____ Are you _____ Male _____ Female?

18. Because we are interested in your opinions, we would like to contact you at some later date by mail. If you are interested in helping out by providing further input, please complete the following:

    Name: _____ Address: _____

    City: _____ State: _____ Zipcode: _____

    Phone: (_____) _____

Thank You for Your Cooperation

Interviewer completes	Date: ___ / ___ / 93
	Time: _____
	Water: _____
	C NC
	Zone: FP B M R